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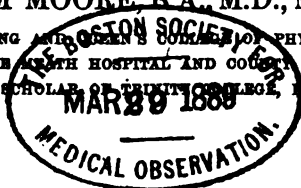
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THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

EDITED BY
JOHN WILLIAM MOORE, B.A., M.D., M.Ch., UNIV. DUBL.;

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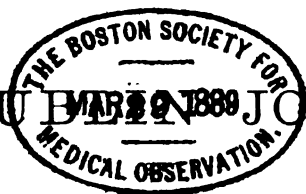
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THE DUBLIN JOURNAL

MEDICAL SCIENCE.

JULY 2, 1888.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*The Diagnosis of Cancer of the Testis.* By WILLIAM COLLES, M.D., Univ. Dubl.; Fellow and Secretary, R.C.S.I.; Surgeon-in-Ordinary to Her Majesty the Queen in Ireland; Regius Professor of Surgery in the University of Dublin; Surgeon to Steevens' Hospital.

I FEAR surgeons of the present day have little cause for congratulating themselves on an improved knowledge in the diagnosis and treatment of Malignant Disease. Although the subject has engaged the attention of many surgeons, and many elaborate works have been written, chiefly on that part relating to cancer of the breast, our present experience as to diagnosis and treatment seems to differ little from the experience of a century ago.

A female complains of a tumour in the breast; this, especially if attended with any pain, is at once suspected to be of a cancerous nature, and its speedy removal is recommended. To this proceeding the patient, alarmed at the very mention of the disease, often readily consents; and it has been even added that, if not absolutely cancer, if left it may become changed and assume the malignant type. Should the operation be successful, and should no sign of the reappearance of the disease occur for two or three years, it is considered as a triumph of surgery, and the eradication of a malignant disease; whereas what has happened is perhaps more readily explained by considering the part removed was of the nature of a benign tumour, the idea never suggesting itself to the mind of the

surgeon that had he allowed the tumour to remain the result might have been the same. Should the disease return after a year or two, the surgeon regrets that he had not seen the case early enough, or that he had not removed a sufficient portion of the patient's body; and thus he is encouraged to seek earlier operation and more extensive excision, ignoring the fact that it is the nature of a malignant tumour to return in a longer or shorter time, and this could not be prevented had he operated, no matter how early. He should consider that the tumour differed from the former case, although he could not find out the difference between the two forms of disease. A question still remains to be considered—Had he known the real nature of the disease, ought he in every case to recommend an operation to remove a disease which he knows will certainly reappear in an average space of two years?

All authors are agreed that there are a very great number of cases in which the patient refuses to submit to operation, or an opinion is given adverse to this proceeding, in which the patient has lived from ten to fifteen years afterwards, and has suffered at times very little pain. In this case an operation would be often very injudicious, and would perhaps deprive the patient of some years of existence.

May it not be the case that, as we see in adenoid tumours of the breast, the advent of puberty often has the effect of removing these tumours; so in adult age, the cessation of menstruation may have some effect in mitigating the virulence and activity of the disease, as we find to occur in some tumours of the uterus? We hence require further investigation to enable us to distinguish—(1) what tumour may remain in the breast and not interfere with the patient's health, or, if removed, will not return; (2) in what tumours an operation will benefit the patient, and—although not prolonging life—will render it more endurable; and (3) in what cases the operation will be injurious, when it seems to accelerate the activity of the morbid changes, and hasten the return of the disease.

I regret I am unable to make any suggestions as to the means of investigation requisite to clear up these difficulties. At present I wish to draw attention to a more malignant form of disease, and one in which a surgeon is at times exposed to much obloquy. I allude to the malignant disease of the testis known as cerebriform or encephaloid cancer of the organ. In general the commencement of the disease is denoted by the occurrence of a hydrocele,

which is probably the result of the irritation produced by the altered condition of the organ.

The course of events, then, is as follows:—The patient applies to the surgeon for the treatment of a hydrocele apparently simple, the transparency of the tumour, situation of testis, and all other symptoms being present.

The surgeon does not hesitate as to the nature or treatment of the disease, and proceeds to tapping, which operation he performs to his own and the patient's satisfaction. Before leaving he tells the patient that only a palliative treatment has been adopted; that he must expect the fluid to be again secreted, and that the tumour will require to be tapped again in from four to six months.

About this period the patient returns, the tumour apparently having regained the size it formerly possessed. The surgeon, feeling the tumour soft and fluctuating, has not much doubt on the subject, and again proceeds to endeavour to draw off the fluid. He passes in the trochar and canula, but on withdrawing the trochar he observes some blood to flow, and at times this alarms him, and he withdraws the canula and closes the wound. I have seen a case in which, however, suspecting that some blood may have been mixed with the fluid, either from some injury or the trochar wounding a vein, he had allowed blood to flow to the extent of a few ounces, till he saw that, although the blood came away, there was no diminution in the size or tension of the tumour; finally, the patient becoming weak from loss of blood, he became alarmed and closed the wound.

The surgeon then tries to find the cause of this failure and to investigate the nature of the disease, but he finds much difficulty in distinguishing between the symptoms of hydrocele and those of malignant disease, a few drops of blood or slight thickening in the sac rendering the ordinary test of transparency unavailing. There may be a slight blush of dusky-red colour on the scrotum, and the veins may appear slightly enlarged and more numerous. We must therefore come to examine more closely the symptoms which may distinguish the two diseases.

In hydrocele, the testis can be grasped at the lower and back part of the tumour; and by forcing the fluid from its proximity, it feels quite smooth, and gives the patient the sensation of pressure on the organ. In encephaloid, the testis cannot be so readily separated; the tumour may be felt, but is hard, irregular on its surface, and does not give the same sensation to the patient. In

examining the bulk of the tumour in malignant disease the sense of fluctuation is most deceptive. Still it is not so soft and yielding as in hydrocele; in the latter it can be moved about from one part to another, and may change its form on change of position. On palpation, also, it will feel much more yielding, and give the sensation of undulatory motion in the fluid. In the malignant disease the semi-fluid substance cannot be moved from its position, because it is confined by the tunica albuginea of the testis.

In the hydrocele the fluid is very movable, yielding in every direction, especially if the patient be standing; it can be pushed up so as to fill the upper part of the tunica vaginalis, and distend the sac up to the external ring.

The condition of the inguinal region affords us much assistance in our diagnosis. In malignant disease, the cord is readily felt; it may be enlarged, but it can be moved under the fingers, and no other substance can be felt. In the hydrocele, at first when small the cord may be felt, but we always feel a portion of the tunica vaginalis more or less distended with fluid. As the hydrocele increases it expands all the cavity of the sac up to the ring; this acts as a wedge separating the integuments from the abdominal parietes, and by this means burying the penis, so that when the hydrocele becomes of great size the organ is invisible, its outline can be marked or felt by a ridge of integuments along the inner side of the tumour, and several concentric folds of integument alone mark the orifice from which the urine flows. In this case, when the fluid is drawn off, the penis is gradually restored to sight, and the patient rejoices to see his old friend return. This burying of the penis is much more marked, or occurs much more rapidly in large scrotal hernia when irreducible or left without a truss, because the force distending the canal is much more effectual, as it is more solid and irresistible.

These are the principal points which will guide our diagnosis in this form of disease. As to progress and treatment, little remains to be recorded. The disease may have a fatal termination, either by local or by constitutional contamination. I have seen a tumour of the liver of great size show itself before the wound made by the operation was healed; the glands deep in the pelvis also become much engorged; or the patient may die from acute lung disease. Nor is this last-named termination to be regretted, for nothing can exceed the misery of the patient when the return of the disease

shows itself locally, either on the end of the stump remaining after operation or upon the giving way of the integuments.

Here a fungus mass will quickly arise, grow to a considerable size, then slough away and fresh fungus arise. I have seen it so large as in a few weeks to resemble a coil of intestine lying in the scrotum; this is attended with a very profuse watery discharge of a most peculiarly fœtid odour, penetrating the entire house, and hardly to be influenced by the strongest deodorants.

During the progress of the disease the patient assumes that pale waxy condition where the lips and every red surface lose their colour, indicating a very altered condition of the blood, as if, to use a common expression, the blood has become converted into water; as if there were few or no sound red globules in the fluid, so that the fungus may, if necessary, be removed with scarcely any loss of blood.

These changes in the circulation keep pace with the local changes, and would lead us to suppose that the first deposit of a malignant cell was contemporaneous with a similar change in a red globule of the blood.

Finally, treatment is only to be considered, as regards the subject of operation, if the cord has any portion uncontaminated by the disease. If it has a natural feel we may remove the disease, but only with the expectation that the patient will die of some internal affection in a few months; if the cord is thickened we fear that the results of the operation will be that the disease will return in the stump or the cicatrix, and thus render the patient an object of disgust to himself and friends by a profuse and most fœtid discharge.

I have seen some cases in which the same malignant form of disease was developed under the integuments, sometimes on the front of the chest and sometimes on the scapula. Here it is with difficulty to be distinguished from an ordinary chronic abscess, and any surgical interference with it is to be strictly avoided.

ART. II.—*Pyæmia of Dental Origin.** By ARTHUR W. W. BAKER, M.D.; F.R.C.S.I.; Surgeon to the Dental Hospital of Ireland.

As pyæmia from dental causes is not very common, or perhaps has not been frequently recognised, the notes of a case which came under my own observation are, I think, deserving of record. Before, however, detailing my own case, I shall refer to some of the scanty literature of the subject.

In the recent edition of *Tomes' "Dental Surgery,"* the author refers to seven cases of acute and chronic pyæmia of dental origin which he has collected from various sources, all of which proved fatal. Two of these, however, in my opinion were, strictly speaking, not pyæmic, as we now understand the term. In one, extension of an abscess connected with a lower wisdom tooth produced some severe unilateral glossitis, and mechanically suffocated the patient. In the other, splintering of the lower jaw in the removal of a tooth gave rise to an abscess, which found its way up the ramus, and through the foramina, ovale, rotundum, and spinosum, into the cavity of the cranium, where meningitis ensued, of which the patient died. The remaining five cases may fairly be classed as pyæmic, and as such deserve our attention, for they point to the fact that alveolar suppuration cannot always be treated as an affection of no moment, but may sometimes be attended with even fatal consequences. Unfortunately, details are wanting in the cases recorded by Mr. *Tomes*, upon which we might with advantage generalise.

Dr. R. J. *Porre*, at the International Medical Congress held at Washington in 1887, brought forward some cases of chronic pyæmia of dental origin, in all of which there was, fortunately, a happier termination than in those recorded by Mr. *Tomes*. Dr. *Porre* gives the following account of one of the cases observed by him:—The patient, male, good constitution and habits, suffered for the last thirty years from neuralgia, besides having constantly recurring furuncles and eruptions in various parts of the body, which would often for months become running abscesses. He experienced burning and itching eruptions of hands and feet, which would finally change to stubborn ulcerations. His bowels were either stubbornly constipated or exhaustingly loose. He suffered

* Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, June 1, 1888. [For the discussion on this paper see page 79.]

from frequent rigors and febrile attacks of varying intensity. profuse night sweats, retention of urine, serious constrictions of the bowels and urethra. Lancinating pains darted from the maxilla of right side to bowels, bladder, limbs, hands and feet, or to whatever part was locally affected at the time. This latter peculiarity, together with the discovery of a little pus exuding from the locality of the wisdom tooth, led to a final correct diagnosis of his case. The tooth referred to was extracted, and a speedy and complete recovery followed. Dr. Porre also read the notes of ten similar cases, which all yielded to the simple remedy of removing the offending tooth.

Mr. Frederick Eve, Curator of the Royal College of Surgeons, England, in a recent communication to the Odontological Society, whilst noticing the fact that in periodontal abscess, although the pus directly gained access to the bone, serious consequences rarely followed—yet related the case of a young man who had been troubled by an abscess in the region of the fangs of a second molar tooth. He attended the funeral of his grandfather, caught cold in the tooth, and died in three weeks of pyæmia.

Some interesting experiments on mice are at present being carried out by Dr. W. D. Miller of Berlin, by inoculating them with the material obtained from gangrenous pulps. As these experiments are not yet concluded, it would be premature to do more than allude to them here; but from Dr. Miller's recent communication to the *Dental Cosmos*, he is evidently quite alive to the importance of investigating this source of pyæmia.

The following case occurred in my own practice. I am happy to say that it was not fatal, and that I succeeded in curing the patient without sacrificing the offending tooth:—

CASE.—Mrs. —, aged thirty-three, widow, consulted me in the beginning of November, 1887, about her first left upper molar tooth, which had given her pain from time to time. The patient appeared to be in excellent health, and presented no evidence of constitutional taint. She stated that the only illness she had had, excepting, of course, her confinements, was a severe attack of scarlatina at twelve years of age, which was followed by general dropsy. At the age of nineteen, the first left upper molar (the tooth about which she consulted me) was filled; this resulted in an alveolar abscess over the tooth. Ten years later she had another rather acute abscess in the same place, which was followed at once by a small abscess on the fourth toe of the right side; then small abscesses broke out over other parts of the body at the same time, the tooth being the seat of

more or less uneasiness. Early in the spring of 1887, she suffered from an abscess in the right ear, which by the medical attendant was thought to be connected with some tooth. About a week previous to consulting me, she had a recurrence of the abscess over the left upper molar; this was followed by a small pimple on the back of the right forearm, which at the time of her visit presented the appearances of a small pyæmic abscess. Viewing the case as one of chronic pyæmia, having its origin in the suppuration about the roots of the molar, I decided to try and save the tooth, and in so doing, if possible, to cure the pyæmia.

The tooth I treated by removing all that remained of the dead and decomposed pulp, cleaning out the roots thoroughly, syringing them first with weak carbolic lotion, then with absolute alcohol. The roots were finally dried with hot air and injected with a solution of iodoform in ether, and the filling of the tooth was completed at a subsequent sitting. There was a swelling, about the size of a small marble, on the gum over the buccal roots of the tooth, corresponding to the site of the alveolar abscess to which I have alluded: this I laid open freely, and allowed it to heal from the bottom. The fluid which escaped from this swelling was more like cystic fluid, such as is frequently found as the result of chronic inflammation round the roots of teeth, than true pus.

It is now more than six months since I treated this case, and being interested as to the result, I have kept the patient under observation. She has had no further trouble with the tooth, and the metastatic abscesses have ceased. That the tooth was the source of the poison, to my mind, appears extremely probable, both from the frequency with which the periodontal abscess was succeeded by an abscess elsewhere, and the fact that the small abscess, which was situated on the patient's forearm when she came to me, subsided more rapidly than any previous abscess on treatment of the tooth; and no abscess has since then appeared.

I am not quite clear as to the explanation of why the pyæmia evidenced itself always on the right side, while its dental origin was on the left. That more serious symptoms did not present themselves in this case was most likely due, as pointed out by Mr. Watson Cheyne in his recent lectures on "Suppuration and Septic Diseases," to the small dose of the poison.

The history of this case, taken in conjunction with the others which I have quoted, shows the importance of investigating the condition of the mouth in any case of pyæmia where we are in doubt as to the source of the disease.

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ART. III.—*On the Relation of Food to Work.* By J. HICKMAN,
Army Medical Staff.

A FOOD may be defined to be any substance which can be taken into the body and applied to use, either in building up or repairing the tissues and framework of the body itself, or in providing energy and producing animal heat; or any substance which, without performing these functions directly, controls, directs, or assists their performance. It is clear that stress is to be laid upon the particular foods that provide the body with animal heat and potential energy, and that the other classes should be treated in their relation to these special duties.

There is no life without the potential energy of food being transformed into actual energy, shown under the various forms which constitute animal existence; there can be no such process of oxidation or source of power manifested without the continual renewal of the factors containing and supplying the force, and also the continual removal of the effete substances.

Food may be presented in the following classification for reference:—

- | | | |
|-----------------|---|--|
| Nitrogenous | { | 1. <i>Albuminates</i> , such as the animal albumens and vegetable glutens, which form the greater part of the solids of meat, fish, eggs, milk, and breadstuffs. |
| | | 2. <i>Fats</i> (or hydrocarbons).—Animal and vegetable fats and oils. |
| Non-nitrogenous | { | 3. <i>Carbohydrates</i> .—Farinaceous and saccharine compounds, such as starch, gum, sugar, glycogen, and inosite. |
| | | 3a. Vegetable acids, changing into carbonates, and so preserving the alkalinity of the blood. |
| Inorganic | { | 4. Salts (mineral) and water. |

Now, to briefly enumerate the properties of the prominent members of this classification in respect to the subject of the essay.

Albuminates.—As every tissue and fluid of the body contain

nitrogen, the presence of this element is essential to the growth and nutrition of the animal structures, without which energy could not be developed, and when developed is proportional to their activity. In the view of work it should not be forgotten that nitrogenous substances are broken up and carried away by oxidation, and the chemical changes must manifest themselves in energy, principally in the form of heat; so that this class directly contributes to force production. However, this would be an expensive source, and may be termed secondary, or unimportant. The chief use of nitrogenous food is to regulate the amount of oxygen required for the oxidation of the non-nitrogenous food; it is indispensable to the sufficient absorption of oxygen by the lungs and its utilisation in the system; part of it breaks up into a complementary unazotised portion which is applied to the development of force and the generation of heat.* Voit and Pettenkofer maintain that fat is altogether formed from albuminates, and that carbohydrates, when accompanied by an abundant supply of albumen, cause fat to be separated and deposited from the albumen. Each quantity of albuminous food requires the presence of a corresponding quantity of carbohydrate to separate the amount of fat due to the former; 100 parts of water-free albumen yield 51·4 parts of fat. This estimate, and the general conclusions of Voit, must be taken in a guarded sense. Hoffmann's experiments and clinical observations seem to show that the ingested fats are stored up largely. The view of albuminates as a force-producer through their transformation into tissue fats could not be omitted from this discussion.

It thus seems that the proteids are burnt up directly and indirectly, and give rise to heat and mechanical work. The amount of energy evolved is, however, comparatively small, and to obtain sufficient for the requirement of work from proteids alone would mean the consumption of them in such quantities that the body would almost be poisoned with excess of nitrogen. If active exercise is taken, more oxygen is brought into the system, and the rapidity of the circulation is increased, and the surplus nitrogen is more easily excreted. What is arrived at is that the albuminates excite and increase the nitrogenous and non-nitrogenous meta-

* In muscle, or in the blood circulating through it, under ordinary circumstances, experiments seem sufficient to show that the non-nitrogenous substances, especially the fats, furnish the energy manifested as heat or muscular movement. But it is also probable that the nitrogenous substances also furnish a contingent of energy.

bolism, and that relatively the amount of them required varies with the exertion to be undergone.*

Fats.—There are different varieties of fat, differing in composition and their degrees of digestibility. In chemical composition they are non-nitrogenous—a large portion of the carbon and some of the hydrogen are readily oxidised. This oxidation is one of the chief sources of animal heat and other forms of force. In the table of relative values, in this respect, fat will be seen to be two and a half times more useful than starch. To the soldier, as well as to others called upon to undergo great bodily efforts and privations, fat proves itself indispensable. Chamois hunters, on their fatiguing chases, take no provisions rich in albumen only fat, and the 8 or 9 ozs. of bacon demanded for the German soldier in 1870 constitute an official recognition of the value of fat as an element in rational dietetics.

It must be remembered that the digestion of fat is limited, and if more than a certain quantity be given this model food simply passes through the system unchanged; indeed, fat is not easy of assimilation without plenty of exercise and a very active condition of the vital functions, and in tropical countries it must be somewhat sparingly consumed. An excess of fat (it is stated) lessens the absorption of oxygen, and consequently lessens oxidation of both fat and albuminates.^b

* Experiments on the elimination of urea seem to demonstrate that there is a slight increase in the total excretion of nitrogen after exercise, and this probably in part proceeds from the disintegration of muscular tissue. But the relation of waste of the proper tissue of muscle to the amount of work is best compared to the trifling loss undergone by the framework of a machine whilst in action. The source of power or fuel is the carbohydrates and hydrocarbons of the food. Apart from this it seems certain that regular exercise produces in the muscular structure an addition of nitrogenous tissue. This and the preceding paragraph justify the necessity of increasing the nitrogen in any hard-working dietary. Also, during work the changes in the muscle consist in active oxidation. An increase in the supply of oxygen is a necessity for increased muscular action. As the absorption of oxygen has already been asserted to be dependent on the amount and vigour of the nitrogenous tissues, it follows if more oxygen is required more nitrogenous food is indicated.—(Voit and Pettenkofer.)

^b Exercise, or work, means a greater increase in the carbon excreted, and consequently an increase of carbon to be given in the food. This is, according to the teaching of physiology, best given in the form of fat, and not of starch, and this is supported by the natural instinct—preferring hydrocarbons when unusual exertion is demanded.

During hard work the appetite becomes keener, especially for meat and fat; the functions of digestion and absorption are more perfectly performed. This, too, points to the increase in any ration in these respects, and also in the salts—especially the chlorides and phosphates.

Carbohydrates comprise the sugars and starches, and form generally the greatest portion of all diets. They are valuable heat and force producers, like the fats, but only contain excess carbon, ready to combine with the oxygen of the blood; the hydrogen in them is already oxidised. Oxidation taking place most readily in them, if freely supplied they delay the metamorphosis of the nitrogenous and fatty tissues. This property of being easily disposed of by combination justifies a liberal use of the carbohydrates in the diet of hot countries.

The formation of fat indirectly promoted by the carbohydrates has been already mentioned; the direct production of fat from carbohydrates is now questioned.* It is usually assumed by their deoxidation they are transformed into fat; and, as the sources of fat, the grand principle of the Banting diet is the avoidance of such articles of food, because in fats excess of carbohydrates lessens the supply of oxygen, and consequently the transformation of the other classes. Sugar is laid up as glycogen, which, perhaps, may be looked upon as a reserve of carbohydrate material, to be given up little by little, and taken up by the tissues. In many details there are striking differences between the fats and carbohydrates. On the other hand, it is safe to assert that the chief duty of the two groups is the production of force, and as such they could be classed together.

The other class of the carbohydrates, the vegetable acids, are useful in preserving health. They do not require notice in detail. The salts can be shown to be essential articles of diet; they may, however, influence the production of force, either by acting independently or by catalysis, in promoting oxidation in the body, and they are by some termed force-regulators. In this term, too, may be included condiments and accessory foods—tea, coffee, alcohol, &c.—which may certainly commence and increase chemical reactions. Whenever, then, increased energy is demanded, a considerable increase in salts must accompany the additional food.

In the preceding remarks heat and energy have been used together as convertible terms. This has been established by the labours of Joule and others. The law of the relation of heat and

* The action of carbohydrates resembles that of fat in protecting from metabolism a certain amount of the circulating albumen; and if given in excess they will, in consequence of the greater facility with which they undergo metabolism, lead to the more hardly metabolisable fat being left unchanged and deposited in the tissues. From this we may conclude that the generally assumed transformation of carbohydrates into fat does not take place.

mechanical energy may thus be stated:—Heat and mechanical energy are mutually convertible, and heat requires for its production, and produces by its disappearance, mechanical energy in the ratio of 772 foot pounds for every thermal unit. The actual numbers are necessary to impress the mind with this exact relationship.

To recapitulate—it is established that life consists of the conversion of potential and actual energy. The muscles really appear to stand in the position of instruments for effecting the conversion of the chemical energy evolved by oxidation of the combustible matter into working power. The non-nitrogenous parts of food whose capacity for oxidation is the greatest, mainly develop the potential energy, the healthy condition and repair of the nitrogenous tissues being necessary for this conversion.

If non-nitrogenous food only is given, the muscles will for a certain time carry on the work, but at the expense of their albuminous constituents, and this waste not being supplied, a deficient state of nutrition will supervene, and the working tissues must eventually fail. Assuming that the development of animal heat is a measure of force-production in all classes of food, the changes by oxidation in muscular tissues do not account for the work performed by them. It can be asserted that energy, potential or actual, is derived from the non-nitrogenous constituents, the elements of the nitrogenous group contributing a secondary amount—this resulting not only from their inferior thermogenic power, but also because they are not fully oxidised in the system. The carbon and the hydrogen in carbonaceous foods are wholly transformed into carbonic acid and water, while urea and other products resulting from proteids are incompletely oxidised.

Parkes' "Hygiene" (Seventh Edition), p. 246, Table I., and p. 248, Table II., may be referred to for the usual tables.

The first table is the expression in foot-tons of potential energy to be evolved from the different class of aliments, and if the numbers are compared the preceding remarks will be justified. In fact, disregarding obscure vital elements—digestion, disposition, and others—the calculation between the quantity of work and the amount of food required for its performance, seems theoretically simple. The exercise on particular labour to be undergone is calculated in foot-tons, which can also be expressed in food or foods. Practically such a calculation is only of relative value; "the mere expression of potential energy cannot fix dietetic value

which may be dependent on conditions of the body unknown to us." There may be, too, differences in the kind of potential energy evolved from different food or foods yielding theoretical equal amounts.

It is now time to discuss the relations between food generally and work, and incidentally the way in which the functions of the body are performed. Life may be assumed to be a form of force, the correlation of which to the other physical forces may yet be more fully understood. In this light it is usual to compare the body to a steam-engine, and the food to the fuel as a source of potential energy.

The work which a steam-engine can be made to do is within wide limits, and proportional to the amount of fuel which it consumes. The force stored up in the combustible appears as heat, and in the engine this heat is converted into mechanical work. In theory this conversion is simple, still in practice it is not possible to construct an engine to fulfil this condition; in the most improved apparatus it is only possible to convert into mechanical work about one-eighth or one-tenth of the heat produced by the oxidation of the fuel, the rest being radiated or any way absorbed in other duties. This loss, too, is much greater, increasing in the cube of the rate of work if the velocity of working be increased. A steam-engine, consequently, utilises only a certain portion of the available energy of the fuel, and one of the objects of engineers is to perfect machines, so as to render useful a larger proportion of the mechanical equivalent of energy laid up in the fuel. Now, the analogy of the body to the above is apparent; the body is essentially a working machine, and it is only when oxygen combines with the other elements, particularly the carbon and hydrogen of the organic constituents, that the potential energy stored up in the food becomes actual energy, manifesting itself in heat and work. A few points of difference must be noticed. When a steam-engine is at rest it requires no fuel, even if it requires repairing its work must be stopped; the waste of its essential parts is insignificant, and bears no relation to the work done. The animal mechanism can never rest; it wastes in all parts and organs, and its kinetic energy is derived from material which has become part and parcel of the machine—in fact, the greater part of the food is necessary for maintenance of the functions of existence, and only a small proportion is reserved for the external work. Experiments of Helmholtz seem to show that this external work should be $\frac{1}{3}$ of

the mechanical force of the digested food, but labour must be *well* applied to get this proportion. If its uses in repairing and renewing the tissues, and its employment on the internal work of the frame be neglected, food would even then be a marvellous fuel and applied in a marvellous manner in the production of available energy. Just like the steam-engine, when the velocity or strain is increased in the body, this ratio for productive work diminishes, and this problem has a particular application to the case of those compelled to compress their duties into a short space of time. This is a very complex question, and to complete the subject the following extract is taken from "Lectures on State Medicine," p. 147 (de Chaumont):—

"The maximum of potential energy we can expect to be converted by an average man will be equal to

$$300 \text{ foot tons} \times (5 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots).$$

Now the sum of this series is 14, and 4,200 is the total amount of potential energy which can be converted in the body. The actual productive work will be equal to

$300 \times (1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots) = 300 \times 2 = 600 \text{ foot-tons,}$
or $\frac{1}{7}$ of the potential energy. If now we add the amount required for the internal work of the body, 2,800 foot tons, we have a total of 7,000 foot tons as the maximum of potential energy the human frame is able to deal with."

Tables can be formed in which the amounts of potential energy are calculated from the amount of CO_2 evolved, and the amounts expended at different rates are given. It may be noticed here that 3 miles an hour can be done for 179 total foot-tons, and this is the velocity at which the minimum of expenditure is arrived at. This is a point to justify the usual rate of marching of troops, and eight hours of this would produce 430 foot tons. This is a good day's work, and is equivalent to raising the body through $\frac{1}{4}$ of a mile. In a military point, looking at the recruit as requiring so much of his potential energy for the growth and development of his tissues, and therefore less must be required from him. Bodily weight and physique, perhaps, give the best data to adjust such demands, in proportion to his strength.

Perhaps this section can best be concluded by an actual calculation in numbers of the relation between food and work (Sanitary Institute, Vol. IV.) The diet supporting life without absolute exertion is given by Playfair to be (see Table I.):—

		Ozs.	Foot-tons evolved.
Albuminates	-	2·5	432
Fat	- - -	1·	378
Carbohydrates	-	12·	1676
Salts	- - -	·5	—
		<hr/> 16·	<hr/> 2466

Now, a man, 150 lbs., gives off about $15\frac{1}{4}$ cubic feet of CO_2 every 24 hours. Now, each cubic foot of carbonic acid represents 160 foot tons,

$$15\frac{1}{4} \times 160 = 2400.$$

Again, the temperature of the body is about 48° higher than that of the surrounding air. The 150 lbs., and expressed in foot-tons,

$$\frac{150 \times 48 \times 775}{2240 \text{ (lbs. in a ton)}} = 2481 \text{ foot-tons of energy.}$$

The correspondence in these three numbers is to be noted.

A more elaborate calculation could be given. The total quantity of heat generated per diem from any diet can be found and expressed in calories. The chief causes of the loss of heat could be enumerated and also expressed in calories. The two results will be found to agree. Such a calculation is made in "Power's Physiology," and is here appended.

A calory, or unit of heat, is the quantity of heat required to raise one kilogramme of water at 0°C. one degree.

Taking Ranke's diet—

		Calories.
100 grains of albumen	=	426·300
100 „ fat	=	906·900
240 „ starch	=	938·880
		<hr/> 2272·080

On the other hand—

Heat required to warm 13 kilogrammes of inspired air,

25 degrees	-	-	-	-	=	84
Heat required to heat the food and drink, 1900 grms.	-	=	47			
Heat lost in cutaneous transpiration, 660 grms.	-	=	384			
Heat lost by pulmonary evaporation, 330 grms.	-	=	182			
Heat lost by radiation from the skin, &c.	-	=	1575			

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Perhaps for ordinary readers the best idea of the whole question is given by the broad statement that the human body under observation loses in 24 hours enough heat to raise 62 lbs. of water from 0° C. to 100° C.

ART. IV.—On *Myxoma of the Chorionic Villi, or Vesicular Mole.**

By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed.; Obstetric Physician, Mater Misericordiæ Hospital, Dublin; President-Elect, Obstetric Section, British Medical Association, &c., &c.

THE practical importance of the ætiology of all forms of intra-uterine death, the continued obscurity of their pathology, and the great difficulty of their prevention, may render the following cases and observations on one of the most important of these causes of embryonic destruction of some interest:—

CASE I.—L. D., aged twenty-eight years, the mother of four children, had a miscarriage at the second month, early in December, and was admitted to St. Monica's Ward on April 15th, in a state of extreme anæmia from uterine hæmorrhage, from which she had been suffering ever since the date of the abortion. The day after admission I rapidly expanded the cervical canal with the dilator recently exhibited to the Academy, so as to allow the introduction of my finger into the uterine cavity, whence I removed a large mass of firmly adherent placental structure,* which was found to have undergone vesicular or myxomatous degeneration. The enlarged uterus was then curetted, and subsequently brushed out with Churchill's iodine; the patient was put on large doses of liquor ergotæ, together with tincture of perchloride of iron, under the influence of which the uterus speedily regained its normal size; the hæmorrhage ceased, and within ten days she was enabled to leave the hospital.

The history of this case is very similar to that of another instance of the same disease that I met with some years since, and to the particulars of which I may therefore very briefly refer:—

CASE II.—E. G., aged thirty years; married; eight children; admitted May 9th, suffering from persistent uterine hæmorrhage, which had continued since November last, when she miscarried at the seventh month. On admission she was in a state of great exhaustion, and completely blanched from loss of blood. Her pulse was 120, and so feeble as to be almost imperceptible at the wrist; and she complained of tinnitus aurium.

* Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, Friday, May 25, 1888.

The hæmorrhage was now a slight but incessant draining, with occasional gushes of blood on every exertion. Stimulants having been given, the uterus was examined, and found to be considerably enlarged. The os was contracted, but sufficiently dilatable to allow the introduction of a faggot of sea-tangle tents; after which the vagina was securely plugged with sponge. On removing the tents next morning the cavity of the uterus was found occupied by a large hydatidinous mass attached to the fundus. The removal of this growth, which filled a small hand-basin, and of a small portion of firmly adherent placenta from which it grew, was attended by considerable hæmorrhage, which was arrested in the ordinary way, and the patient made a rapid recovery.

This case was the first instance that I met with in which a large myxomatous growth was developed from a very small portion of adherent placenta, continuing its abnormal vitality for five months after childbirth, and under circumstances which prevented subsequent impregnation. A fragment of the retained placenta, on examination, proved to be in a state of fatty degeneration.

Importance of the Study of Placental and Embryonic Disease.—The history of all cases of placental disease appears to me deserving of record, since in the comparative paucity of communications on this subject in our "Transactions," we find sufficient evidence that these diseases have even yet attracted less attention than their practical importance demands. It should, perhaps, be here observed that I include vesicular mole amongst placental diseases, inasmuch as, from my own experience and observation, I can confirm the views of those who hold that in such cases the disease generally begins in the placental chorionic villi, and thence the cystic proliferations extend through the intervening tissues into the parenchyma of that structure. The obscurity of their origin, and the difficulty of diagnosis in these cases, have—since the publication, many years ago, of the late Sir James Simpson's memoirs on this subject—been to some extent cleared away by the papers on placental diseases of Dr. Robert Barnes in the "Medico-Chirurgical Transactions," and by those of Drs. Graily Hewitt and Braxton Hicks in the "Transactions of the London Obstetrical Society," and above all by the elaborate researches of Virchow, and by Dr. Priestley in his recent work, "On the Pathology of Intra-uterine Death." Notwithstanding all this, however, no subject of equal interest in a practical as well as in a physiological point of view remains in greater obscurity than the diseases of the placenta. It would be superfluous to dwell on the importance of this still

neglected field of investigation, or to do more than observe that being, as it is, the sole medium of vital communication between the fœtus *in utero* and the mother, any deviation from the normal condition of the placenta by which its development may be arrested and its physiological action impaired or perverted must be of serious consequence either to mother, or to child, or to both.

Various Forms of Placental Disease.—Amongst the diseases of this organ affecting the mother as well as the child are inflammations of the placenta, especially chronic or subacute placentitis, leading to morbid adhesions between the afterbirth and uterus, and occasionally giving rise to the two most serious complications of parturition—viz., *post-partum* hæmorrhage and inversion of the uterus. Another placental disease of no less importance to the mother than to the child is congestion, sometimes resulting in hæmorrhage or placental apoplexy; whilst amongst the placental diseases which chiefly affect the fœtus by impairing or destroying the structural integrity of this organ are œdema, atrophy, and hypertrophy of the afterbirth, and the various forms of degeneration—fatty and calcareous; and, above all, that now under consideration—viz., vesicular, or myxomatous, or, as it was formerly termed, hydatidiform degeneration. In my own practice I have now met with five cases of this disease, the infrequency of which appears from the following table:—

Authority	Cases admitted into the Rotunda Hospital	Cases of Hydatinous Disease reported
Dr. Collins - - -	16,654	-
Drs. Hardy and M'Clintock	6,634	1
Drs. Sinclair and Johnston	13,748	4

Thus it appears that in 37,036 cases admitted into the Lying-in Hospital, there were only five instances of hydatidiform mole recorded, being in the proportion of 1 in 7,407 cases.

Vesicular or hydatinous disease of the placenta consists in degeneration and abnormal proliferation of the placental chorionic villi, usually following, although occasionally producing, the death of the fœtus. In the old "Dublin Obstetrical Transactions" and elsewhere I related several cases of this kind. In most of these the hydatidiform mass was expelled from the uterus in the fifth month. In some instances, however, such growths are expelled earlier, as in a case published by Dr. Moorhead, of Weymouth, in which a hydatidiform ovum was produced at about the tenth week by a woman, aged fifty, who had not had a child for twenty years

before. In other cases it may be much later, as in my second case, also in one related by the late Sir James Simpson, in both of which the patients reckoned themselves gone beyond the full time of utero-gestation; and in another, given by Mr. Ley, of South Molton, in which the woman was supposed by herself and by her medical attendant to have gone the full term of nine months. The symptoms of this disease can at first hardly be distinguished from those of ordinary pregnancy. If, however, in addition to the signs that usually denote the death of the foetus, the patient experiences occasional gushes of water, together with slight hæmorrhage from the uterus, lasting for a short time and recurring at irregular intervals, we may suspect the existence of hydatidiform disease in the placenta of a blighted foetus. The expulsion of these growths from the uterus is generally attended with severe hæmorrhage.

History of this Subject.—At a time when I had more leisure than is now at my disposal, I collected together the opinions of many of the older authorities on the character of these growths, and some few of their views thereon may possibly seem to others, as well as to myself, of sufficient interest to warrant their brief recapitulation in this connection.

The first of these theories is that of Hippocrates, who, in the treatise “On Airs, Waters, and Places,” ascribes the occurrence of uterine hydatids to the effect of drinking marsh and stagnant waters. Dr. Adams, in his learned commentary on the work of Hippocrates, says:—“It may appear singular that hydatids of the womb should be peculiarly prevalent in the case of women that drink unwholesome water from marshes, and yet our author’s observation is confirmed by a modern authority, as quoted by Coray:—‘Il a été également prouvé par les observations des modernes, que les fausses grossesses produites par les hydatids sont très-communes dans les pays marécageux ou la plupart des habitans ont une constitution lâche, propre à l’affection scorbutique qui y est presque endémique, qu’elles se terminent plus ou moins tard par l’excretion de ces hydatids.’”^a

A full account of the ancient doctrines on this subject may be found in Crooke’s *Μικροεμπογραφία*, published in 1651. And as that work is not very commonly met with at the present day, I regret that the space at my disposal only suffices for a few lines of quotation from this very curious volume:—“To perfect conception,”

^a Hippocrates Translated, with Annotations. By Francis Adams, LL.D. Sydenham Society Edition. Vol. I., p. 197. London. 1849.

says our author, "there is further required an *εὐκρασία* or laudable temper of the womb: for those whose wombs are either hot or cold, or moist or dry above measure, does not conceive, as saith Hippocrates. If, therefore, any of these things be wanting, we cannot hope for a lawful conception, but either there will be none at all, or a depraved and vicious, such as is of the moon calf or *mola*. For Nature rather endeavoureth an imperfect and depraved conception than none at all, because she is greedy of propagation, and diligent to maintain the perpetuity of the kind of things: whereupon, rather than she will do nothing, she will endeavour anything how imperfect soever." ^a

One of the most interesting "Exercitations" in "Harvey's Treatise on Generation" is that in which mention is made of this subject. Harvey observed that these substances are usually expelled in the early stage of the supposed pregnancy, and his ideas on the point appear to coincide with those of Hippocrates generally. ^b

From the time of Harvey down to the early part of this century, by the majority of obstetric authorities, all vesicular growths found in utero were regarded as identical, in character and development, with the true hydatids or acephalocysts discovered in other parts of the body. And obvious as are the differences between the thin-walled aggregated vesicular masses, resembling a bunch of white currants, resulting from the cystic proliferation of the placental chorion villi of a blighted ovum, and the densely laminated separate acephalocysts, it is not a little strange that these should have been confounded together even comparatively recently, and by an observer so generally accurate as the late Dr. Blundell, with whom, some twenty years ago, I had a correspondence on this question. Dr. Blundell says:—"Hydatids sometimes form in the ovum and (if I may be allowed the expression) devour it; sometimes a part only being converted into their substance, so that they lie embedded and concealed in the placental structure; sometimes the whole, or with the exception of a few vestiges being consumed, so that in place of the ovum nothing but these animalcules remains in the uterus." ^c It may be observed, however, in explanation of the error into which former writers thus fell, that in some few

^a *Μικροσκοπία*. A Description of the Body of Man, together with the Controversies and Figures thereunto belonging. By Helkiah Crooke, Doctor in Physicke, Physitian to His Majesty. Folio. London. 1651. P. 219.

^b Harvey on Generation. Exercitation the 56th, p. 420. Edition of 1653.

^c Blundell's "Principles and Practice of Obstetric Medicine." Edited by Drs. Lee and Rogers, p. 250.

instances true hydatids have been found within the uterus. Several years ago a case of this kind was published in the *Lancet* by Mr. Wilton, Surgeon to the Brighton Lying-in Institution:—"The patient was a woman aged thirty-seven, the mother of four children. She was admitted into hospital, suffering from uterine hæmorrhage and bearing-down pains. She died four days afterwards, and on examination the veins of the fundus were found varicose and congested; a large mass of hydatids was found protruding into the cavity of the uterus, and a large cluster, equal in size to a small tea-cup, was firmly adherent to the fundus. The lining membrane in the diseased part was entirely absent, and the masses of hydatids were firmly imbedded in the structure of the uterus, the vessels being dissected into layers by them. Other masses were found between the mucous membrane and the structure of the uterus, and also in the right ovary, the substance of which was thus disorganised." And, more recently, the following suggestive case bearing on this question was related by Dr. Graily Hewitt:—"A young unmarried woman died with excessive enlargement of the abdomen, and on examination it proved the peritoneal cavity was beset with true hydatid cysts, which had originated primarily in the liver. These hydatid cysts were found attached to the uterus anteriorly as well as posteriorly, to the ovaries, to the walls of the pelvis—in fact, few portions of the peritoneal surface were without them. Had life been prolonged, the bursting of some of these cysts into the uterus, or into the vagina, was almost inevitable, and then the phenomena would have been presented of a young unmarried woman discharging true hydatids from the generative passages."

The first writer who maintained that all such moles are necessarily dependent on impregnation was Lamzweerde, who, in 1685, asserted that "*Virgines non possunt concipere vel generare molam sine copula maris.*" The same author also declares that "*Vidua non potest concipere molam virtute mariti defuncti relicta in utero, sine novo maris auxilio.*" And the modern theory on the origin of these growths in placental disease is a revival of the opinion of a Dutch writer of the seventeenth century (Ruysch), who says:—"Hæc recenta moles placentæ, penitus amittens genuinam suam indolem, quia est vasorum sanguineorum contextus, integro suo corpore mutatur in congeriem hydatidum."* The same view was

* Ruysch (Frederic)—*Thesaurus Anatomicus. Pars Secunda, Tom. Primus, p. 47. Amstelodami: 1710.*

supported by William Hunter in his Lectures in 1785:—"I have seen," he says, "a placenta in the fourth month all degenerating into hydatids . . . the placenta and fœtus being thus converted. They are generally the accompaniments, as also probably the results, of blighted and other diseased forms of eventually unproductive generation."

Modern Pathology of Vesicular Mole Pregnancy.—I need not occupy your time by any further allusion to the older doctrines on this subject, the more modern literature of which is probably already familiar to the Academy. On the latter point I shall therefore merely add that the majority of recent authorities support the views concerning the pathology of vesicular mole or, as it is sometimes termed, myxoma of the chorionic villi, which are clearly expressed in the late Dr. Spiegelberg's "Text-book of Midwifery,"* an English version of the first volume of which has been lately published by the New Sydenham Society.

The vesicular or cystic mole, according to Spiegelberg, consists of a conglomerate of vesicles filled with pale, and for the most part clear, fluid, which are surrounded by the decidua, and in places project through it. They vary in size from a walnut to a millet seed, and are connected with each other by thin threadlike stalks.

The vesicles are degenerated chorionic villi. The degeneration consists of an abundant proliferation of the villi, and of hypertrophy of the internal mucoid matrix of the individual villus, the nuclei and cells increasing like the intercellular substance. In the fresh condition each vesicle has an epithelial covering; next to this comes the ground substance consisting of a closer tissue with small stellate cells, which are connected with the separate fibres of the tissue. The substance forming the stalks is very much like *Wharton's jelly*, and consists of a firm mucous tissue, whose fibres are arranged longitudinally and pass imperceptibly into the homogeneous layer of the vesicles. The fluid contained in the latter shows a great similarity in composition to liquor amnii, but in addition to albumen it contains comparatively much mucin.

If the vesicular mole is formed at a *very early date*, as is the rule, the whole surface of the ovum undergoes degeneration, the embryo perishes, is disintegrated, and no remnant of it can be found. When the degeneration sets in after the *placenta is formed*, it is

* A Text Book of Midwifery. By the late Otto Spiegelberg. Translated from the German by J. B. Hurry, M.D. New Sydenham Society, London. 1887. Vol. I., p. 451.

limited to the latter, although the whole surface of the ovum generally appears on superficial observation to be covered by the cysts; the foetal cavity in this case is usually very distinct, and the remnant of the embryo or even the whole (atrophied) foetus is present in it. Sometimes a simultaneous increase of the liquor amnii takes place. Degeneration of certain lobes of the placenta in the midst of healthy ones—*partial myxoma*, indeed in some places in different cotyledons, is also met with, and under such conditions no injury need result to the foetus.

The vesicular mole with a healthy foetus has several times been seen. The *cause* of the hyperplasia of the villi is unknown. It is undecided whether it indicates primary disease in the ovum, or depends on some irritation due to disease of the internal surface of the uterus, or to the maternal blood. That it is not a consequence of a very early death of the embryo, as is still often supposed, is clear, even though the villi may possibly continue to grow for some time after the death of the foetus. Such a supposition is contradicted by the rarity of vesicular moles, compared with the much more common early death of the embryo, by this pathological growth occurring after the formation of the placenta has begun, by the fact that atrophied embryos are met with in the moles, and by the cases of partial degeneration. The death of the foetus must therefore be looked upon as a consequence of the degeneration. The view which seeks to explain such degeneration by a morbid condition of the uterine mucous membrane (decidua) is supported by evidence of such disease obtained in different ways, and by the cases of partial degeneration. In those cases, however, in which no disease can be found in the uterus it becomes probable that the cause of the hyperplasia is to be sought for in an *anomalous development of the allantois*, all the more so as vesicular structures have also been observed in the umbilical cord. This view can also explain those cases of the degeneration of one twin ovum side by side with a normal second twin.

Vesicular Moles without Impregnation.—The question as to the probable occurrence of vesicular moles independently of impregnation in some instances may be one of great importance in reference to the character of the patient. On this point Dr. Priestley has expressed a very decided opinion. This question, he says, came before a Court of Inquiry in India some years ago, and involved both the character of an unmarried woman and the reputation of a medical man whose opinion had impugned her chastity. The

medical man collected the opinions of all the leading obstetricians in this country, and, although the balance of opinion greatly preponderated in favour of vesicular chorion being always the result of impregnation, there was at least one notable dissentient, who believed that the vesicles might be formed in the virgin uterus. We now know so accurately the way in which these vegetations are produced that doubt should no longer exist on the matter. With our present knowledge it would be just as reasonable to suppose that a child might be expelled from an unimpregnated uterus as a true vesicular chorion.* For my own part, loath as I am to differ from so eminent an authority on this subject as Dr. Priestley, and although I have not myself met with cases of vesicular mole which were not accompanied by the ordinary history and symptoms of pregnancy, I nevertheless agree with my old friend, the late Dr. Montgomery, that even yet "our knowledge on this point is by no means sufficiently precise, nor our collection of facts sufficiently extended to warrant us in pronouncing positively on the question, or asserting decidedly in a case of suspicion that a woman was pregnant merely because she discharged hydatids from the uterus." Nor can there be any doubt that several apparently well-authenticated cases that would seem to support the contrary opinion have been recorded by authorities whose veracity is unimpeachable. Thus Dr. Samuel Ashwell, in his treatise "On the Diseases of Women," speaking of the vesicular mole of the uterus, says:—"I have seen, at least, one example where they were the result of diseased action of the uterine lining membrane, independently of sexual intercourse."

Mr. Douglas Fox, Surgeon to the Derbyshire Infirmary, also reported the particulars of a case "in which a large mass of vesicular hydatids was expelled from the uterus of a maiden lady, where the hymen was unruptured, and of whose chastity there could not be a suspicion." Somewhat similar cases have been related by Dr. Hamilton, Dr. Fischer, and other writers.

It would be useless here to refer further to this question, or to review the many theories that have been suggested in explanation of such cases at different times. For my own part, I still adhere to the views I have maintained for many years on this subject—viz., firstly, that in the great majority of cases these growths originate in the cystic degeneration, or proliferation, of the

*The Pathology of Intra-uterine Death. By Wm. O. Priestley, M.D. London. 1887. P. 112.

exochorionic villi of a blighted ovum. Secondly, that cases may, however, possibly, also occur in which similar-looking products were found in the uterus, independently of impregnation. Thirdly, that the few well-authenticated and exceptional instances of the latter kind may probably be accounted for on the supposition of their origin in the ovary itself, and that a diseased ovum is primarily vitiated ere its arrival in the uterus, where it subsequently becomes adherent, and whence it continues to derive nutrition for its abnormal vitality and cystic proliferation or monstrous development, until, by its bulk, expulsive action is produced.

Treatment.—In the way of treatment I know of nothing that can be done to arrest the progress of the disease, but an attempt should always be made to prevent its recurrence by improving the general health of the patient by alteratives and ferruginous tonics, especially any of the saline chalybeate waters, such as Ems or Kissengen abroad, or Tunbridge Wells and Lisdoonvarna at home.

It has been recommended that we should bring on the expulsion of these vesicular moles as soon as they are discovered. This, however, is clearly wrong practice; for it is quite possible that only a portion of the placenta may be affected; or, as I have seen, the birth of a healthy living child may be immediately followed by the myxomatous placenta of a blighted twin conception. Hence, even if this disease could be diagnosed at any time during the nine months of pregnancy, we should still let Nature take her course, rather than by unnecessary interference run the risk of destroying a living foetus which experience has shown may possibly co-exist with the vesicular growth *in utero*.

OPIUM IN POST-PARTUM HÆMORRHAGE.

DR. R. B. M'CALL, Georgetown, Ohio, reports a case of very severe *post-partum* hæmorrhage successfully treated with drachm doses of tincture of opium.—*Phil. Med. and Surg. Rep.*, 11th Feb., 1888. Brandy and opium were favourite remedies for *post-partum* hæmorrhage in this country prior to the introduction of ergot.

GLONIN IN ACUTE ALCOHOLISM.

DR. E. V. GOLDSHOVEN, Atlanta, Ga. (*Southern Med. Rec.*), reports a case of acute alcoholism in the stage of collapse which recovered under the use of drop doses of a 1 per cent. solution of nitro-glycerine every two hours for six hours.—*Med. Standard, Chicago*, March, 1888.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Treatment and Utilisation of Sewage. By W. H. CORFIELD, M.A., M.D. (Oxon.); Fellow of the Royal College of Physicians, London; Professor of Hygiene and Public Health at University College, London; Medical Officer of Health for Saint George's, Hanover-square; ex-President of the Society of Medical Officers of Health. Third Edition, revised and enlarged by the Author and LOUIS C. PARKES, M.D., Cert. Public Health (Lond.). London: Macmillan & Co. 1887. 8vo. Pp. 511.

At the meeting of the British Association at Exeter in the year 1869, a Committee was appointed to report on the "Treatment and Utilisation of Sewage." The first edition of the work before us was prepared for the use of that Committee, and was published after the Report of the Committee had been read at the Liverpool meeting of the Association in September, 1870. About a year afterwards, the second edition of Dr. Corfield's work appeared.

In the sixteen years which have passed since then much advance has been made in the science of State Medicine in general, and a riper experience has been gained as to the treatment and utilisation of sewage. Hence Dr. Corfield wisely determined to issue a new edition of his work, in which undertaking he has happily been helped by his friend and former pupil, Dr. Louis Parkes—the bearer of an honoured name.

In the preface to this, the third, edition, Dr. Corfield tells us that the historical portions of the book have been retained in their entirety:—"The investigations of the British Association Sewage Committee—more especially as regards the determination of the percentage of the manurial ingredients of sewage actually utilised by irrigation on land, and recovered in the form of crops; the accurate method devised by that Committee for taking samples of sewage and effluent water for analysis; the practical inquiry originated by the suggestion made by the late Dr. Cobbold that entozoic disease might be spread through the agency of sewage

farming; and the quantitative examination, with a view to its manurial value, of the compost resulting from the use of earth closets—which have not hitherto received the attention they deserve—are described in detail.”

The only fault we have to find with the foregoing passage is the extreme Latinity of its English. However, this is beside the mark, and our grateful task is rather to point out the many merits of Dr. Corfield's work from a scientific point of view.

The thoroughness with which the author handles his subject may be seen from the length of the table of contents, which takes up no less than twenty-three pages of letterpress. Dr. Corfield divides his subject into twelve heads, each of which occupies a chapter. In the first chapter he gives an account of the early systems of sewage removal, or rather storage—namely, middenheaps and cesspools, starting with a definition of sewage. He says (page 2):—

“The term ‘Sewage’ will for convenience be applied generally to refuse matter (especially excretal) without reference to any method of removal.”

The unsavoury tale of Chapter I. prepares us for Chapter II., with its story of “Filth and Disease—Cause and Effect.” And yet the dreadful state of things shown in these chapters arose as much from carelessness as from ignorance, for more than three centuries ago the celebrated Dr. Caius (John Kaye, of Norwich), in his “Boke, or Counseill against the Disease commonly called the Sweate or Sweatyng Sicknesse,” published in 1552, gave the following wholesome advice:—“Take away the causes we maye, in damnyng diches, auoidynge cariôds, lettyng in open aire, shunning suche euil mistes as before spake of, not openynge or sturrynge euil brethyng places, landynge muddy and rottē groundes, burieng dede bodyes, kepyng canelles cleane, sinkes and easyng places sweat, remouynge dongehilles, boxe and euil sauouryng thynges, enhabitynge high and open places, close towards the sowthe, shutte toward the winde, as reason will and the experience of M. Varro in the pestilēce at Corcyra confirmethe.”*

The lesson taught in the second chapter is, in short (to use our author's own words), that “filth causes sickness, sickness inability to work, inability to work poverty and non-payment of rent, to say nothing of starvation.”

Chapter III. gives an account of improved midden-pits and

* Quoted by Dr. Laycock, in his evidence before the “Health of Towns Commission,” 1844.

cesspools, such as are described in a Report by Dr. Buchanan and Mr. J. Netten Radcliffe, published in the appendix to the Twelfth Report of the Medical Officer of the Privy Council. It also deals with midden-closets, pail-closets, and such like, including the "Eureka system," as carried out at Hyde, near Manchester—mentioned only to be condemned, and, in fact, since abandoned; and the "Goux system," or the "Patent Absorbent Closet System," which consists in a modification of the ordinary pail closet by the lining of the tubs with some kind of absorbent material—a system which can never be an entire success. At the close of this chapter Dr. Corfield unreservedly condemns both the cesspool and the midden systems of removal of sewage, and incidentally gives a good definition of each system. The cesspool system deals with "the treatment of liquid manure, as such, in the various forms of cesspools, pails, tubs, and so forth, without the addition of any notable quantity of extraneous matters, whether with a view to the dryness or the disinfection of the contents." The midden system has to do "with its treatment by admixture with a sufficient quantity of ashes and other refuse to render the whole a more or less solid dry mass." The author very properly points out that the former of these systems is, as a general rule, connected with a considerable amount of nuisance, while the second is almost invariably connected with great nuisance. "In neither of these systems," he adds, "is there any provision made for the removal of the liquid house refuse from slops, washing, cooking, and so forth, so that all these, and generally the chamber slops as well, have to be thrown down the sink, and pass away into the sewers, thus necessitating the purification of the sewage in some way, and so leaving the great question unsettled."—(Page 79.)

The second part of the book, as we may say, treats of the dry-closet and water-closet systems of excremental removal. The former method is described in the fourth chapter under the headings "Ash-closet," "Charcoal-closet," and "Dry-earth closet"—the last-named being based on the principle that earth is the natural deodoriser of excremental matters, but differing from all the other systems in proposing to bring a certain quantity of earth to the manure, while they take the manure in some form or another to be placed upon the earth. A very full and interesting account is given of the earth-closet system in India and in English villages and towns, as well as of the disposal of slop waters in small villages.

On the whole, Dr. Corfield and Dr. Louis Parkes are of opinion that "for villages which are not provided with a general system of sewerage, the best plan for the disposal of the refuse matters is the adoption of earth-closets under careful and systematic supervision, and the provision of self-acting flush tanks for the disposal of the slops and waste water by sub-irrigation drains."—(Page 131.)

In Chapter V. water-closets and water supply are discussed at length and with judicial fairness, and Dr. Corfield and Dr. Parkes express the opinion that the water-closet system "may undoubtedly be made to answer perfectly every sanitary requirement by a tithe of the supervision and incomparably less scavenging work than is universally acknowledged to be absolutely necessary in all other forms of excremental removal. . . . *So that it is not the fact of their being water-closets, but the fact of their being badly constructed or not looked after, that makes them a nuisance wherever they are so.*" This is high praise, coming from such authorities, and seems to be justified by the great improvement in the sanitary condition of towns into which the water-closet system has been introduced, and which improvement is described in the seventh chapter.

One of the most interesting sections of the work is Chapter VI., which opens with a historical sketch of sewerage works, beginning with the Cloaca Maxima of Rome. The original idea of a sewer was that it was a large drain to carry off the rainfall and subsoil water of a town, and it was only secondary considerations that pointed out the convenience of making this drain a receptacle for liquid refuse matters also—in fact, a "drain-sewer." This is the system which holds good, as is well known, in most large towns, but there is also the "separate system" of drains and sewers, one of the most complete examples of which, as yet introduced, is furnished by the city of Memphis, in the United States. The plans of these works were designed and carried out under the direction of Colonel Waring. Memphis is situated on the Mississippi river, and contains 35,000 inhabitants.

Other topics dealt with in this chapter are the flushing, ventilation, and cost of sewers; Continental systems of sewerage; and the Shone, Liernur, and Berlier systems. Of these last three, the Shone system is a method of raising sewage by means of compressed air in the case of towns situated on a low-lying level ground, or where the sewage has to be pumped to the outfalls. The Liernur system is now so well known that we need not describe it. In so large a city as Amsterdam it has worked well for several years. The Berlier

system is very similar in principle to that of Liernur. The house-drains are connected with iron pipes, in which a partial vacuum is maintained by means of an air-pump, so that the sewage is conveyed away from the houses by pneumatic pressure to the pumping station, which may be outside the town. In 1881, M. Berlier submitted a scheme for the drainage of Paris on this plan to the Municipal Council of that city, and there can be no doubt that the system has proved of great sanitary advantage in that district of Paris, extending from Levallois-Perret to the Madelaine, in which it has been adopted.

In the seventh chapter—on the “Sanitary Aspects of the Water-carriage System”—evidence is brought forward to show that a definite amelioration in the prevalence of sickness in general, and of fevers (especially typhoid) in particular, has taken place since a more efficient removal of excreta and other refuse from the neighbourhood of dwelling-houses has been provided for a great many towns by improvements in the drains and sewers, and by the more general introduction of water-closets. Reliance is placed on Dr. Buchanan’s researches in this direction in the Ninth Report of the Medical Officer of the Privy Council. These are too well known to need further mention at this time of day. Dr. Corfield’s conclusions may be summarised as follows:—

1. The general introduction of the water-carriage system has been a great sanitary benefit, and wherever it has worked badly it is owing to most flagrant mismanagement or want of reasonable precaution.

2. As regards water-closets, the *cabinet anglais* is in all essential particulars far superior to every other form, not excepting even the *cabinet inodore*.

3. Since most authorities—Parent Duchatelet included—agree that the channels for the removal of excretal refuse should be impervious, and should, where practicable, be merely glazed stoneware pipes, it is absolutely necessary that at the same time there should be a special system of *deep* rain-water culverts to ensure the drying of the surface and of the subsoil.

Several topics are discussed in Chapter VIII.—namely, the value of sewage, the injury caused to rivers by the discharge of sewage into them, the pollution of drinking-water, and the discharge of sewage into tidal waters. Taking an estimate of Baron Liebig and Mr. Ellis that 266,000,000 tons is the total annual amount of dilute London sewage, we find that its value at one

penny per ton is £1,108,333 6s. 8d. In the remainder of the chapter Dr. Corfield shows that this valuable sewage is worse than wasted—not only in the case of London, but in that of most large towns. It pollutes drinking-waters, destroys fish, causes silting up of river-beds, and forms in tidal waters “sewage-zones,” or areas in which concentration and precipitation of the sewage take place, due to the oscillation of the tides.

The following three chapters are devoted to the utilisation of sewage by the various processes of—(1) straining, or simple filtration, and precipitation (Chapter IX.); (2) filtration—namely, through peat-charcoal, or through town-ashes and vegetable charcoal (both practically unsuccessful), or by the process of “intermittent downward filtration” (Chapter. X.); and (3) irrigation (Chapter XI.). In this last-named chapter we meet with a statement, on the authority of Blumenbach, that by the destruction of the large forests which formerly bordered the Rhine “the climate has been changed from a very cold one to a temperate one, the winters never now having anything like the severity they had in former times, when that river was frequently frozen over.” We question the accuracy of this statement, which is much too dogmatic and extreme.

The last chapter will especially interest all sanitarians. It discusses the influence of sewage-farming on the public health. Notwithstanding Dr. Cobbold’s conjecture that sewage-farming will cause the spread of entozoic disease, Dr. Corfield and his colleague see no reason to alter their opinion that “it has not yet been shown that sewage irrigation has ever increased the amount of entozoic disease in men or cattle, still less that it is likely to do so to a greater extent than any other method of utilising human excrement.”

This important treatise concludes with a long appendix, extending over 23 pages, on the treatment and utilisation of manufacturing refuse, and a short “Summary,” written in 1870, and which, after seventeen years, the authors “see no reason to alter.” We congratulate them on the research to which every page of their work bears witness, and the nation on the service rendered to the Public Health by the publication of that work.

THE EDITOR.

The Student's Handbook of the Practice of Medicine. Designed for the Use of Students preparing for Examination. By H. AUBREY HUSBAND, M.B., C.M., F.R.C.S. Fourth Edition, revised and enlarged. With Illustrations and Tables. Edinburgh: E. & S. Livingstone. 1888. Pp. 510.

FOR a student preparing for examination, who knows his practical work, there is probably no better reading than careful notes taken by himself in the lecture-room and at the bedside; but these notes are not so much valuable for what they contain as for what they bring to mind. Every page of his notes should remind him of illustrations or examples quoted by his teacher, of symptoms observed in a patient, or of morbid changes observed at an autopsy. But give these notes to another and they are only valuable for what they contain—there are no memories to be called up by them—and even what they contain may be misleading for want of the cautions of the teacher, who pointed out the exceptions to crude generalities. So it is that whilst one's own notes are valuable, those taken by anyone else (whether read in manuscript or print) are generally valueless and misleading.

Dr. Husband has attempted to assist students by laying before them what seem to be his notes. How misleading these notes are may easily be seen by examining how some common diseases are spoken of:—

Page 89—"The typical range of temperature in measles is as follows:—From 106·3° F. on the evening of the fourth day to 109° F. on the following evening, and then a rapid fall to 102° F. on the morning of the seventh day."

Page 82—"In scarlet fever the temperature on the evening of the second day is about 105·6°."

Same page—"Compare this course in the temperature of this disease [scarlet fever] with that of measles; the sudden fall from 109° F. on the fifth day to 102° F. on the seventh day is typical of this latter disease."

If these are average temperatures it would be of interest to see the series of observations from which they were deduced! A temperature of 109° F. being stated in two pages of a fourth edition to be the typical temperature in measles is an inexcusable offence.

Under "Typhoid Fever" (p. 56) we read—"The diet should consist of milk, beef-tea, soups, and light-boiled eggs"—a dangerous regimen, with no caution as to altering it for symptoms.

On the next page the important question of diet during convalescence is shortly and unintelligently summed up:—"Be very careful that solid food be not too soon taken."

Under "Rheumatic Fever" (pp. 149 and 150), the following three paragraphs appear in the order given, but separated by other matter:—

"*Treatment.*—In the acute form the treatment consists in the administration of a brisk saline purge in the early stage of the disease, followed by the exhibition of the salts of potash, combined with the iodide of potash and colchicum."

"Of late salicylic acid has been used with most beneficial effect in the treatment of this disease."

"The salicylate of soda is now most used."

It would seem that the author has simply printed the old notes of his student days, with any additions he may have made from time to time.

These extracts are sufficient to justify us in recommending students to read a standard Practice of Medicine, and avoid cram-books which bristle with errors. That such a book should be in its fourth edition is at once an unaccountable and unfortunate fact.

A Text-book of Biology, comprising Vegetable and Animal Morphology and Physiology. By J. R. AINSWORTH DAVIS, B.A. With Illustrations, Glossary, and Examination Questions. London: Charles Griffin & Co. 1888. Pp. 462.

THIS is a successful attempt to produce a handbook so complete that by reading it, and examining the types described, a student may acquire a knowledge of biology without necessarily consulting any other book. This renders it for the general student much more useful than Huxley and Martin's well-known book, which deals only with the types, omitting the matter required to connect these types in the students' minds as some of a widespread series, most of the other members of which series can be easily understood by the knowledge gained by the types.

The book is divided into two parts, a Botanical and a Zoological, each of which deals with a number of types morphologically and physiologically, then draws out the points of comparison between them, and ends with an outline of classification. There are 158 illustrations, many (and these by no means the worst) being

original. There are 192 examination questions, chiefly taken from London University Calendars. There is a separate index-glossary to each part, but both are properly placed together at the end of the book.

There is occasionally a tendency on the part of the author to make this rather a cram-book, but this is probably unavoidable when so much has to be compressed into a short space. The language is also sometimes rather freer than is generally met with in text-books. For instance, it is somewhat startling to read of an umbel being "a telescoped raceme," and yet it well explains the effect of the suppression of the internodes. Such expressions, however, occur but rarely, are never useless, and always serve to elucidate the matter in hand.

We can recommend this as the most useful text-book of Biology that has yet appeared.

A Manual of Diseases of the Nervous System. By W. R. GOWERS, M.D., F.R.S. Vol. II. Diseases of the Brain and Cranial Nerves. General and Functional Diseases of the Nervous System. London: Churchill. 1888. Pp. 975.

THIS volume, which completes Dr. Gowers' great work on the nervous system, begins with a description of the structure and functions of the brain. After describing the anatomy of the surface of the brain, he gives the rules of Horsley and those of Reid, by which the position of the different parts of the cortex may be determined during life. Then follows a short description of the histological structure of the grey matter of the convolutions, founded, for the most part, on the account of this subject given by Bevan Lewis. We then come to the discussion of the cortical centres, a subject at present of such engrossing interest. While a general correspondence is admitted between the cortical centres of man and those found by experiment in the monkey, we are warned against "assuming a precision at present unwarranted by the actual evidence." While a certain amount of information may be got from irritative symptoms, yet as these may be caused by disease adjacent to as well as in a cortical centre, they are of less value than are cases in which localised lesions have caused definite loss of function—either motor or sensory. Even these are of conclusive value only when they are persistent, for acute lesions often cause symptoms of wider range than correspond to the

destruction. While negative evidence is often of great value, the fact must be borne in mind that lesions (tumours, abscesses, &c.) slowly developed often merely press aside the nervous structures without destroying them, and so a part may seem to be destroyed where the destruction has not really occurred, and the nervous structures are very tolerant of such slowly-developed processes. Further, account has to be taken of the readiness with which destruction of one part of the brain may be compensated by the other hemisphere, as seen in the rapid disappearance of lateral movement of the head and eyes, and of one-sided paralysis of the muscles of mastication, and of the trunk muscles. As to the motor centres there is good reason to believe that, as in the monkey, they are situated in the two central convolutions and paracentral lobule, extending backwards through part of the superior parietal lobule, and perhaps forward to the root of the first frontal convolution. The leg centre lies highest up and extends to the paracentral lobule. There is some reason to believe that the movements of the great toe are represented in front of the highest part of the fissure of Rolando. Beyond this we do not know much as to the representation of individual movements.

The arm centre is situated in the middle third of the central convolutions, extending higher on the ascending frontal than on the ascending parietal, and probably overlapping the centre for the leg.

The centre for the movements of the face is situated in the lower third of the ascending frontal convolution, probably extending to the ascending parietal. The movements of the angles of the mouth are represented on a level with the fissure between the middle and lower frontal convolutions; those of the lips and tongue, and probably those of the jaw, in the lowest part of the ascending frontal, and possibly in the adjacent root of the third frontal.

The position of the centres for the movements of the head and eyes, and for those of the movements of the trunk muscles have not yet been certainly ascertained in man, because compensation by the opposite hemisphere occurs so readily that the loss of movement is transitory.

As to the precise nature of these motor centres, "it is certain that movements are produced by their stimulation in man as well as in animals. It is certain, also, that the fibres which conduct motor impulses to the cord spring from them, and pass directly downwards. Hence, it is difficult to believe that any considerable

amount of error can be involved in designating the region 'motor,' especially from the standpoint of practical medicine."

As regards the sensory centres our knowledge is less precise. It is probable that the motor centres have also some sensory function, since paralysis of a limb due to lesion of those parts is often accompanied by some blunting of sensibility, and in irritative lesions of the central convolutions the motor spasm is often preceded by a sensory aura. While it is probable that the sensory area extends to the medial surface of the hemisphere, "all the facts hitherto observed are opposed to the inference drawn by Ferrier from experiments on animals, that any part of the medial surface has an exclusive or even a preponderant relation to cutaneous sensibility."

The olfactory centre is situated probably in the anterior extremity of the uncinate convolution, but fibres either from the nerve itself or from this centre cross the middle line to go to the opposite hemisphere.

In the occipital lobe a centre is situated for the corresponding half of each retina. Although complete hemianopia has been produced most frequently by disease of the apex of the lobe and of the cuneus, yet since lesions of other parts have also caused this symptom, we do not as yet certainly know the position of the visual centre in the occipital lobe. Munk believes, from his experiments on animals, that the half field of vision is serially represented in the occipital cortex, the anterior half corresponding to the upper quadrant, and the posterior half to the lower quadrant. "Since small cortical lesions cause incomplete hemianopia, it is probable that in man also there is such a projection of the field as Munk describes, but it is not probable that the projection occupies the whole occipital region. There must be a representation of the colour fields in the cortex distinct from that for light and objects, since colour hemianopia has been met with as an isolated symptom. Wilbrand assumes that all impressions are conducted first to the apical region, because disease there causes total loss, and that there is a re-representation of the colour half field in front of this."

The fact that disease causes sometimes not hemianopia, but crossed amblyopia, is best explained by the theory that there is on the outer surface of the brain in front of the occipital lobe a higher visual centre, in which the half fields are combined and the whole opposite field is represented. The field of the same side is also, but in a less degree, represented in this centre. This

explains the fact that crossed amblyopia often disappears (owing to compensation by the opposite hemisphere), while hemianopia is usually persistent. The centre in question is located at the posterior and inferior part of the parietal lobule, *i.e.*, in the angular gyrus, in its widest sense.

The auditory centre would appear to be situated in the posterior half of the first temporo-sphenoidal convolution. Each auditory nerve seems to be connected with the centres in both hemispheres, so that compensation is possible, although habitually the connection with the opposite hemisphere only is in functional action.

Nothing is known of the centre for taste.

The centres concerned in articulate speech correspond to those for the movements of the lips and tongue, by which articulation is effected. They are situated at the posterior extremity of the third frontal convolution and the adjacent part of the ascending frontal in the left hemisphere. While the psychical processes seem to be mainly carried on by the prefrontal lobe, there is reason to believe that the motor and sensory regions also subserve mental operations.

After an admirable summary of the present knowledge of the anatomy of the deeper parts of the brain and of the origin of the nerves, Dr. Gowers proceeds to the general symptomatology of brain disease. In this chapter, which for clearness, fulness, and general excellence is scarcely to be equalled, we would specially notice the section on affections of speech, in which the difficult subject of aphasia, in its various forms, is treated with the hand of a master.

The section on the ophthalmoscopic symptoms is, as was to be expected, full of valuable matter. The following is an important practical point:—"An actual pathological change of the disc (as distinguished from mere congestion), however slight in degree, is usually attended by some swelling of the papilla, and especially by lessened transparency of its structures. The effect of this change is first to lessen the sharpness of the edge of the disc, and then to obscure the edge altogether. It is to this point, therefore, that attention must be chiefly directed. The effect of a morbid change in the distinctness of the edge is greater when the disc is examined by the direct than by the indirect method. On the other hand, if the indistinctness is apparent and not real, is due to the tint of the disc being nearly that of the choroid, and not to lessened transparency of the structures in front of it, the edge appears more distinct in the direct than in the indirect method of examination."

As to the causation and significance of optic neuritis, "the conclusion is that optic neuritis is probably rarely due to a single factor; that the most potent element is the descent of a process of tissue-irritation, which, when it reaches the papilla, sets up a more intense inflammation; that in some cases this factor is alone effective; that in many others its influence is aided by the effect of distension of the sheath, hindering the escape of effete liquids, increasing the oedema, or even conveying irritating material. The distinction between optic neuritis and choked disc is one of degree, not of cause. So far as optic neuritis has any single significance, it is that of the presence of an irritative process within the skull."

"A chronic cerebral process may cause an acute neuritis, but a chronic neuritis never results from an acute process, and the degree of the chronicity of the neuritis is an indication of the degree of chronicity of the intracranial disease."

In cases which are going to improve, the lessening of the optic neuritis is often the first indication of improvement.

In the chapter on the diseases of cranial nerves the most remarkable sections are those on the optic nerves and on the motor nerves of the eye-ball. This most difficult subject is admirably treated, and the descriptions copiously illustrated by drawings and diagrams.

In speaking of facial paralysis, Dr. Gowers throws doubt on the frequent occurrence of paralysis of the palate in this affection:—"The best-established fact regarding paralysis of the palate is that it is produced by disease at the side of the medulla, damaging the hypoglossal and spinal accessory nerves."

A very able chapter on localisation of cerebral diseases precedes those on the different diseases of the membranes of the brain and on the organic affections of the brain itself. From these chapters we can make no extract.

The last four hundred pages of the volume are occupied by an account of the general and functional diseases of the nervous system.

The bacterial nature of tetanus is considered to be unproved:—"The significance of the facts discovered by Nicolaier does not seem to me so great as is assumed by some writers on the subject. From the fact that certain poisons tetanise to the proof that tetanus depends on a poison, is a much longer step than at first sight appears."

From an examination of Pasteur's preventive treatment of rabies,

Dr. Gowers thinks two facts only are certain—first, that there is very little danger of communicating rabies by the treatment, although at least one unquestionable case of this has occurred; secondly, that the treatment is not invariably successful, but still there seems good reason to believe that of those treated much fewer get rabies than would be the case if the treatment had not been adopted, and hence “the treatment is of great value, although it does not secure absolute safety.”

In concluding our notice of this remarkable work, we have to express our conviction that it is by far the best text-book of diseases of the nervous system at present in existence.

Physiological and Clinical Studies. By ALEXANDER JAMES, M.D., F.R.C.P.E. Edinburgh: Oliver & Boyd. 1888. Pp. 112.

IN this volume are collected papers which have been already published in medical journals. They are eight in number, and have the following titles:—

1. Tubercular Disease from the Physiological Standpoint.
2. Nutrition and Reproduction: considered generally, and as bearing on the *Ætiology* and Treatment of Disease.
3. Dilatation of the Ureters and Renal Pelves—Hydronephrosis.
4. The Physics of the Bladder and Ureters.
5. Note on the Tenacity of Tissue.
6. Transudations and Exudations.
7. Tendon Reflex and Clonus Phenomena.
8. Ankle Clonus in relation to the height of the individual.

It will be seen that there is considerable variety in the subjects treated. Our space will, however, not permit of our giving a detailed analysis of the papers. This we regret the less, as we believe that many of the conclusions are, to say the least of it, open to very serious question.

The Demon of Dyspepsia; or, Digestion Perfect and Imperfect. By ADOLPHUS E. BRIDGER, B.A., M.D., F.R.C.P.E. London: Swan Sonnenschein, Lowrey & Co. 1888. Pp. 344.

THIS is a most objectionable book. It is a work addressed to the general public, dealing with the diagnosis and treatment of diseases which no one who had not a medical training could possibly understand. Its object is not far to seek, for in the first paragraph of

the preface we read that Dr. Bridger has devoted ten years of practice very largely to this branch. In fact, the book seems to be a clumsy and impudent advertisement; and although the author thinks but little apology is needed in offering it to the British public, considerable apology is needed in sending it for notice to a respectable Journal, one of whose functions is to watch over the honour of the Profession of Medicine.

Inebriety: its Etiology, Pathology, Treatment, and Jurisprudence.

By NORMAN KERR, M.D., F.L.S. London: H. K. Lewis. 1888. Pp. 415.

THE main object of Dr. Kerr's work seems to be to establish Inebriety (why not call it "Drunkenness"?) as a recognised disease, the prevention and treatment of which comes within the province of medical men. We feel that it is very important that this position should be established, in order that physicians may try to recognise it at an earlier and more curative stage than that at present generally first noticed. At the same time Dr. Kerr seems rather to neglect the moral responsibility of the intemperate, and their power of avoiding the exciting and continuing cause of the diseased condition, and so rather to check the efforts of those who try to help the intemperate by lessening the temptations to which they are exposed.

Take, for example, a case given on page 6:—

"An abstemious and well-living carman, aged 41, is thrown accidentally from his car. He sustains some obscure head injury. Not long thereafter he suddenly lapses into frequent outbreaks of drunkenness. To the medical attendants, who have carefully excluded all other contributory factors, it is clear that this is a case of a traumatic inebriety from the effects of an injury. In this case, too, neither a vicious disposition, nor a sinful desire, nor a criminal propensity has given rise to the alcoholic indulgence."

Those who have much experience of drunkards will recognise the difficulty of coming to such a diagnosis. Hereditary tendency, the habit of taking stimulants during sickness, and relying on them during convalescence, and the impossibility of believing the statements of drunkards, are all factors that must be taken into account.

Dr. Kerr first treats of "inebriety" as a disease of the nervous system, most nearly allied to insanity.

The name "Narcomania" is suggested, in order to express, first, that the morbid craving is not for inebriating agents for their own sakes, but for the temporary relief afforded by them; and, secondly, that not only alcohol but any other narcotic may be the object of the craving. So that a mania for narcotism, or narcomania, is the morbid condition.

"Inebriates" are then divided into five classes:—

I. The common sot.

II. Those who have recurrent attacks of insanity, leading to an outbreak of intemperance. Strangely enough, Dr. Kerr does not mention that some of these cases do not lose their self-will until they have tasted drink, and that even after taking it they might often escape the attack if their will was sufficiently strong.

III. Inebriate criminals.

IV. Inebriates from alcoholic poisoning. This seems a faulty division, as all, except the few who deliberately drink to become drunk, owe their inebriety to the poisoning effects of alcohol.

V. Inebriates from heredity.

Chapter XXIII. contains a very interesting analysis of the various estimates of the mortality from drunkenness. The Report presented to the Harveian Society, in November, 1882, gives an estimate of the deaths occurring in London of persons who have injured their health directly or indirectly by alcoholic excess. Taking the same average, the yearly number of premature deaths amongst the personally intemperate in the United Kingdom would be about 52,000. To this the number of deaths arising directly or indirectly from the intemperance of others must be added.

The ætiology, predisposing and exciting causes, and the pathology and treatment are also dealt with, as well as the medico-legal aspects of the disease.

The book is full of illustrative cases, and the various topics are treated with great fulness.

One of the most valuable parts of the book to medical men will be the cases illustrating the earlier symptoms of inebriety from alcohol, morphin, chloral, &c. Most medical men must sometimes have had to regret not having discovered the evil at an early and curable stage. Other important parts are those devoted to treatment and to a discussion of the laws affecting inebriates at home, in the Colonies, and in foreign countries. Both of these subjects are dealt with very fully.

Lectures to Practitioners. On the Diseases classified by the Registrar-General as Tabes Mesenterica. By W. T. GAIRDNER, M.D., LL.D. *On the Pathology of Phthisis Pulmonalis.* By JOSEPH COATS, M.D. London: Longmans, Green & Co. 1888. Pp. 286.

IN the first series of these lectures Dr. Gairdner combats the prevalent idea that the condition known as tabes mesenterica is solely, or even chiefly, a tuberculosis of the mesenteric glands, causing death by obstruction of the lacteals, and consequent prevention of absorption from the intestines. He contends that in most cases the affection is a chronic peritonitis, usually of a tubercular nature. He further insists strongly on the fact that although often fatal, this disease is by no means invariably so, but that under favourable circumstances many cases recover. He quotes a case recorded by Sir Spencer Wells, in which, when the abdomen was opened during life, the peritoneum was found in an advanced condition of tubercular inflammation, and yet recovery took place; and a still more remarkable case in which extensive cancerous disease was found, and yet the result was equally fortunate. These, although not cases of tabes mesenterica, show that very serious peritoneal mischief may exist without ending fatally. In the last lecture rules for diagnosis, prognosis, and treatment, preventive and curative, are given. In an appendix numerous cases are recorded, with remarks. These lectures are in the highest degree suggestive, and worthy of the attention of everyone who has to treat children's diseases.

In Dr. Coats's lectures a good account is given of the pathology of pulmonary phthisis, but they do not contain anything strikingly new, or which is not to be found in most good pathological textbooks. He divides the disease into the caseous and the fibroid forms. Both begin in obstruction, inflammation, and caseation in a bronchus, but while in the caseous form the extension is to the alveoli, giving rise to catarrhal caseous pneumonia, in the fibroid form extension takes place along the lymphatics and affects chiefly the fibrous tissue of the lung. Both forms are tubercular. The former affects younger subjects and runs a more acute course than the latter. The importance of the bacillus is fully recognised, but the caseation, which is the central phenomenon in phthisis, is due not to the organism itself but to the soluble matters produced by it. While it is not denied that tuberculosis is sometimes trans-

mitted by contagion, it is shown that this rarely occurs. The predisposing causes of phthisis are dwelt on at considerable length, but there is nothing very new brought forward on this subject.

The hæmoptysis which occurs in the early stages of phthisis is considered to be caused not by rupture of a vessel, but by diapedesis, as occurs in embolism, and to be due to obstruction or impairment of the circulation in the vessels in the neighbourhood of the primarily diseased bronchus. The hæmorrhage which occurs in the later stages is usually due to aneurysm of a vessel in the wall of a cavity.

The occurrence of primary tuberculosis of the larynx as a rare event is contended for, chiefly on the evidence of two cases, neither of which, however, is quite conclusive. In the rare cases in which general tuberculosis follows phthisis the extension occurs owing to infection of the blood from a tubercular pulmonary vein.

The lectures are illustrated by several rather roughly executed wood engravings.

The Germ Theory of Disease. By FRANCIS W. CLARK, L.R.C.P., &c. London: Churchill. 1888. Pp. 22.

IN this pamphlet a short and popular, but readable, account is given of some of the most prominent facts which have been discovered as to the causation of diseases by bacteria. It is well suited for the general reader, but would, of course, have no value for the pathologist.

Note-book for Dental Students (Dental Anatomy and Physiology).

By JAMES RYMER, L.D.S., Eng., M.R.C.S. London: J. & A. Churchill. 1888. Pp. 67.

MR. RYMER states in his preface that "as almost all branches of the medical profession have a 'Note-book,' written with the express object of proving useful prior to examinations, it occurred to me that a little work of this kind would be appreciated by many dental students; accordingly, I have collected together the chief matter connected with dental anatomy and physiology with the above object."

Although we do not, as a rule, favour these short-cuts to knowledge, students being so apt to cram from them at the last moment before an examination, instead of reading the portions of a text-

book which they have previously carefully marked, or their own lecture-notes, still we must admit that Mr. Rymer's little book is far from objectionable, and contains in a few pages most of the important facts of human and comparative anatomy.

Notes on Dental Surgery, intended for Students of Medicine and Medical Practitioners. By J. SMITH, M.D., F.R.C.S.E.; Surgeon-Dentist to the Queen in Scotland, &c. Edinburgh: Maclachlan & Stewart. 1887. Pp. 76.

INTO a small compass Dr. Smith has endeavoured to compress as much dentistry as he has deemed it necessary for medical students and practitioners to be acquainted with. That such a little book was sadly needed we can bear abundant testimony, not alone from the entire absence of rudimentary information on dentistry as frequently displayed by medical students, but by the queries so often put to us by our brethren engaged in country practice as to whether there was not some small book which would afford them a minimum of knowledge about teeth and their diseases. Dr. Smith has accomplished his task with a certain measure of success, his directions for the extraction of teeth being in most cases extremely good. But we regard his chapter on anæsthetics as very unsatisfactory, and quite unnecessary. Considering that his book is intended for those who are supposed to be fairly familiar with their use, it would have been better to have devoted the space to some more precise directions for performing ordinary filling operations, for we regard the information in the previous chapter on this subject as not likely to afford the general practitioner very much help.

The Causation of Pneumonia. By HENRY B. BAKER, M.D., Lansing, Mich. Reprinted from the Annual Report of the Michigan State Board of Health for the year 1886. Lansing: Thorp & Godfrey. 1888. 8vo. Pp. 85.

A PAMPHLET on the Causation and Prevention of Pneumonia, by Dr. Henry B. Baker, is being distributed by the Michigan State Board of Health. It is an 85-page pamphlet, and is a compilation of statistics, collected by the State Board of Health, relating to pneumonia in Michigan and in other parts of the world. It is a thorough consideration of the subject, and seems to prove

that pneumonia is controlled by temperature and humidity of the air. Pneumonia increases after the atmosphere is cold and dry, and decreases after the air is warm and moist. One would suppose that such climatic causes could not be controlled, but Dr. Baker points out how he thinks the disease may be greatly lessened by controlling the temperature, and especially by moistening all air which requires to be warmed, in all buildings public and private. During the time of greatest danger from the disease (cold weather) most people spend half their time in buildings where such conditions can be controlled, and Dr. Baker claims that it is the long-continued exposure that causes this disease; so that, if the indoor conditions are properly cared for the prevalence of pneumonia will be greatly lessened.

The Hospital Prayer Book: containing Prayers for daily and occasional use; also a Short Form of Public Service for Lay Readers in Hospital, with a few remarks on conducting the same. Arranged by EDWARD JOHN WARING, C.I.E., M.D., F.R.C.P. Lond. Second Edition. London: J. & A. Churchill. 1888. Pp. 111.

THE above lengthy title fully explains the intentions and scope of the book. First, there are prayers for hospital use, arranged for the mornings and evenings of a week. The words are chiefly taken from the Liturgy of the Church of England. Then there are occasional prayers; next follows the Short Service for Lay Readers, bracketed passages of which may be omitted when it is desired to make the service still shorter; and the book closes with a selection of hymns suitable for hospital use, and a list of passages of Scripture suitable for lessons.

The book is carefully written, and is well calculated to fulfil the author's object in any hospital where there is sufficient uniformity in the religion of the patients to allow of its introduction.

Dissolution and Evolution and the Science of Medicine: an attempt to co-ordinate the necessary facts of Pathology and to establish the first principles of Treatment. By C. PITFIELD MITCHELL. London: Longmans, Green & Co. 1888. Pp. 246.

IN the opening sentence of his preface the author thus states his design:—"By the following pages it is proposed to disseminate some new applications of Mr. Herbert Spencer's leading generali-

sations. The sustaining elements of the Synthetic Philosophy are the doctrines of evolution and dissolution. The design is to inquire whether these may not be made fertilising principles for large collections of the data of pathology, and thus the means of practice for the physician and surgeon." It will be easily seen that such a work as this does not admit of an analysis which would be intelligible or which would do justice to the author. Whoever takes an interest in purely speculative discussions of this kind must read the work for himself. It is not devoid of interest, and displays ability in the writer, nevertheless we cannot but think that had Mr. Mitchell possessed more personal acquaintance with pathology, and not derived so much of his information from books, he would have seen the weakness and inconclusiveness of many of his arguments and generalisations.

The Nursing Record: a Journal for Nurses and a Chronicle of Hospital and Institution News. Published weekly. London: Sampson Low, Marston, Searle, & Rivington. No. 1. April 5th, 1888.

THE federation of the nursing profession has been so successful that an "organ" is now a necessity, and the "Nursing Record" appears well designed to form the medium by which the various nursing institutions and bodies of nurses scattered throughout the United Kingdom may keep in touch. That there is an opening for such a paper is shown by the recent formation of the British Nurses' Association, and by there being at present some 15,000 nurses in the United Kingdom.

The "Nursing Record" at present contains twelve pages in a well-designed cover. The articles are not too long, and there are plenty of short, chatty paragraphs. The paper is good and the type clear. We trust it may have a prosperous existence, and long continue to practically carry out its motto—*Qui non proficit, deficit.*

ASTHMATIC MIXTURE.

R. POTASSII iodidi, 15 grammes; tinct. lobeliæ, 15 grammes; aquæ dist., 25 grammes—ft. mist. One teaspoonful in a glass of beer at the beginning of each principal meal.—Dr. Dujardin Beaumetz, *Montpellier Médical*, November 18, 1887.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

[Concluded from Vol. LXXXV., page 520.]

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Syphilis and its Relation to Insanity.—Dr. Savage, of Bethlem Hospital, opened a discussion on this subject, in the section of Psychological Medicine, at the International Medical Congress at Washington. As a preliminary step, he called attention to the fact that, amongst other authors, Dr. Wilks had pointed out that brain lesions following syphilis are very frequent in cases in which the secondary symptoms have been but slight. Dr. Savage's experience coincides with this. Further, he found that amongst the children of the insane few have shown any signs of constitutional syphilis. Amongst the cases he referred to were many in which some local specific trouble appeared to be the starting-point from which general degeneration of the nervous system has begun. In such cases the specific changes acted rather as local irritants than as a constitutional poison. In Dr. Savage's opinion, there is no possible line to be drawn between some cases of syphilitic nervous degeneration and general paralysis of the insane. He maintains, too, that true general paralysis may be caused by syphilis alone or combined with other causes. On the other hand, he points out that it is not true that all cases of general paralysis must have a syphilitic history. From the pathological standpoint he lays stress on the fact that in cases of general paralysis associated with syphilis, he does not find anything special which would not have been found in any other cases of general paralysis; he does not find any specific overgrowth of fibrous tissues, either about the vessels or elsewhere. As to gummata, though he has had at Bethlem a fair opportunity of making autopsies, he can hardly

recall a single case in which there was to be found a gumma to account for the symptoms; he has often diagnosticated them, but he has not found them. It seems to him that the changes, such as ptosis and external strabismus, which are so frequently met with, are not so commonly the result of coarse changes as we are led to expect. His own opinion is, that in many of these cases local causes of interference with nutrition arose, and were much more easily removed than would be a solid growth like a gumma. The rapidity of the cure of those cases is against their being due to gumma. As to the general results of these local changes, whether they be in the vessel walls or not, there appears to be a local interference with nutrition which may be recovered from, but which is rarely cured without a scar, and this scar may be the starting-point of degeneration. In nearly every case in which general paralysis follows on these local troubles, there is some other active cause for the breakdown—thus, overwork, worry, sleeplessness, anxiety, drink, injury, or excess; and there is one other factor deserving—nay, demanding notice, hereditary predisposition to neuroses. In these cases the weak point is the nervous system; and here is found the first evidence of the general degenerative changes. Dr. Savage cannot go so far, as some have, as to say that, with heredity, syphilis is almost always sure to be found selecting the nervous tissues. He believes in most cases there has been some vascular and tissue change in the nervous system, and that this may be quite general, and that the selective nature of the disease affects certain parts more than others, and that, though recovered from, there is either vascular weakness, or there is some exudation material which is not perfectly absorbed, which will under some conditions begin to act as a fresh cause of irritation, and in some cases may set up a rapid change, which runs its course in a few weeks; while in other cases the process is slow in the extreme, if it is to be considered as allied to inflammation. He cannot believe that a poison is locked up for so long—ten, fifteen, twenty, or even thirty years—and then, in the shape of bacilli, invades the tissues. Dr. Savage suggests that in some cases the treatment may have something to do with the symptoms. He has been struck with the number of cases, which have been thoroughly well treated with mercury, which have become general paralytics, and in so many of these cases there was very great tremor, in some instances recalling mercurial tremor. He has no proof of this, but grave suspicions, especially when he has found so many victims

among medical men who have kept themselves for years on mercury. As to the general pathology of these cases, he repeats that it is that of general paralysis generally.

The Diagnosis of some Aberrant Forms of General Paralysis of the Insane.—Dr. Joseph Wigglesworth, of the Rainhill Asylum, communicated to the Liverpool Medical Institution some interesting observations on this subject. He alluded to the fact that sometimes cases occur without any of the ordinary mental or motor symptoms, and these are at first incapable of recognition. A patient came under his care, a female, aged twenty-six, of immoral antecedents, suffering from violent mania, which approached the acute delirious type, and for a time placed her life in danger. There was nothing to ~~justify~~ ^{excite} suspicion of general paralysis; ophthalmoscopic examination, however, revealed complete white atrophy of the optic discs, and ~~when~~ ⁱⁿ the acute mental disorder subsided it was found that she was almost quite blind. The question arose whether the mania and optic atrophy were not both due to gross syphilitic disease within the cranium; but if this were so, the optic atrophy would have been consecutive to neuritis, whereas it appeared to be primary, and, further, acute mania as a result of cerebral syphilis is, if it occurs at all, very rare indeed. These considerations led to rejection of the idea of syphilitic disease; and as optic atrophy never occurs in ordinary insanity, except as an accidental association, there seemed to be strong grounds for looking upon the case as one of general paralysis, in the later stages of which optic nerve atrophy is not uncommon, though it is very unusual in the earlier stages. The conclusion arrived at was justified by the progress of the disorder, for in twelve months' time the patient succumbed to this disease. In some cases of general paralysis, convulsions of the epileptiform type constitute a prominent, even an engrossing feature of the disease, and for a time it bears so close a resemblance to epilepsy proper as to render the diagnosis a matter of great difficulty. Convulsions, having the character of mere local twitchings, or of the distinctly epileptiform type, occur at one period or another in the majority of cases of general paralysis, but in these the diagnosis has been made from other symptoms; but now and then cases crop up in which epileptiform convulsions are the first symptom of the disease to attract attention, and paroxysms may recur, at greater or less intervals, for many months—even, perhaps, a year or more before other well-marked signs of the disease show themselves. In one

such case under Dr. Wigglesworth's care, where epileptiform fits had been coming on for a year, and where there were no indications of general paralysis, the condition of the pupils allowed of a correct diagnosis and prognosis being made. The pupils were equal in size, regular in shape, but were contracted, measuring but $1\frac{1}{3}$ mm. in diameter; they were quite inactive to light, but acted well to accommodation, answering to what is called the "Argyll-Robertson pupil"—a pupil which is characteristic of locomotor ataxy. Further on in the case under consideration the knee-jerk was absent. Death occurred five months after admission, consequent on a severe series of fits, and *post mortem* examination revealed the usual appearances found in general paralysis. In other obscure cases Dr. Wigglesworth has found the condition of the pupil a valuable aid to diagnosis, and he thus sums up the main facts he brought forward:—

"General paralysis may be present when the characteristic exalted delirium is absent, and even when there is no appearance whatever of the peculiar tremors of the muscles of the lips and tongue, and without any affection of speech. It may depart from the normal types in three different directions—(1) that of violent mania undistinguishable from acute mania of the ordinary type; (2) that of melancholia, resembling the simple varieties of this affection; (3) it may closely simulate epilepsy. In all these cases it may be found that the pupil has lost its reflex action to light, whilst retaining its normal movement with accommodation; and if this sign is present, it is the most important diagnostic feature we possess."

A Case of Unilateral Convulsions, and another of Hemiplegia occurring in Uræmia.—Dr. F. X. Dercum reported these two cases to the Philadelphia Neurological Association, which are interesting in connection with the observations of Raymond and of Chantemesse and Tenneson. The following are the particulars:—

CASE I.—H. S., coloured, aged 69 years, an inmate of the Philadelphia Almshouse, had while in the out-wards occasionally suffered from convulsions. On several occasions he had been admitted into the epileptic ward of the hospital. Here it was noticed that he usually had several convulsions in close succession, each lasting about five minutes, and that after each attack was over he would fall asleep. His convulsions were always general and attended with frothing at the mouth. Mentally he was much impaired. He had delusions of persecution, and sometimes imagined himself un-

able to walk. He was also at these times violent and maniacal at night, requiring to be strapped in bed. On August 15th, 1887, having much improved, he was at his own request again transferred to the out-wards. On August 27th, after having had occasional fits for several days, he was again admitted to the epileptic ward. On this day his convulsions seemed much worse than usual. They were almost continuous, and he was brought into the ward in a semi-conscious condition. In striking contrast with the seizures previously observed, the spasms now existed only on the left side, beginning apparently on the left side of the face, extending quickly to the left arm, and thence to the left leg, being less severe in the last-mentioned member. During the quiescent period it was observed that the left arm was paralysed, as was also to some extent the left leg. The left side of the face was also paralysed; the mouth was drawn towards the right, and the left cheek was flaccid. The conjunctiva of the right side was sensitive, but that of the left was not. The urine was drawn off and examined for albumen, but none was detected. The temperature was 97.2° , pulse 140. The sphincters were relaxed. After the convulsions had ceased altogether, the patient slept. Consciousness had evidently been absent during the attack, but on the following morning, August 28th, it had fully returned. The condition of left hemiplegia, however, persisted. His urine was now examined a second time, and revealed both albumen and casts, the latter in large numbers. On the evening of the 28th the convulsions recurred, the patient having nineteen in rapid succession. On the morning of the 29th he was again conscious, and talked; but during the day gradually became weaker, and died at one o'clock.

An autopsy was held within the following twenty-four hours, and revealed the following:—Calvarium of moderate thickness; dura mater very adherent, the brain being removed in the calvarium; pia not thickened, but its meshes very œdematous; veins of vertex full; pia presented milky opacities here and there, and was easily separated from the convolutions, a sub-pial space having been formed, which was distended with lymph; vessels of base extremely atheromatous; brain as a whole soft, flattening by its own weight; ventricles large and excessively pale; chorioid plexuses very pale and cystic; velum interpositum presented whitish granulations; on section the cortex was found pale, and the white matter excessively œdematous; serial section of both hemispheres failed absolutely to reveal a focal lesion. In the general post

mortem nothing of special importance was found, except that the kidneys were markedly granular and fatty. The lungs were emphysematous, the heart fatty, and the aorta somewhat atheromatous.

CASE II.—J. H., aged 82 years, white, in the out-wards of the Philadelphia Hospital, complained of weakness in the left arm and leg. This continued for four weeks, when he was admitted to the nervous ward of Dr. Mills, temporarily under Dr. Dercum's care. Here it was noticed that he dragged the left leg a little in walking, and that he moved the left arm with difficulty. Sensation on the affected side was also dulled. The hemiparesis grew gradually more and more pronounced, and was as sharply defined as a hemiplegia of organic origin, which, indeed, it was at first supposed to be. At last, though sluggish mentally, he was able to reply to questions, and to make his wants known in his native language—German. Gradually, however, he failed in mind and body; incontinence of urine, delirium, and coma set in, and after having been in the ward two weeks he died. During life the urine had been examined, and revealed a small amount of albumen. On the day following death, the autopsy was held and the following conditions were noted:—Calvarium and dura normal; pia arachnoid loose and very œdematous, its meshes milky; ventricles excessively pale; chorioid plexuses presented numerous large cysts; velum interpositum infiltrated; brain very soft; on section found to be œdematous throughout; careful serial sections *revealed no focal lesions*; the kidneys were found to be *much contracted and cystic*, and markedly cirrhotic. The other organs revealed nothing of consequence. The lungs presented some adhesions in the right pleura; the heart valves were thickened; the aorta was atheromatous.

Both of the above cases are doubtless to be relegated to affections of the nervous system occurring during and as a consequence of Bright's disease. Chantemesse and Tenneson have already recorded two cases of unilateral convulsions occurring in the course of this affection, and have verified one of them by *post mortem* examination. Their cases are in every way a counterpart of the case here reported. The convulsions were strictly limited to one side, and the autopsy revealed merely general œdema of the brain and chronic interstitial nephritis. Dr. Wigglesworth communicated to the Liverpool Medical Institution a somewhat similar case, where hemiplegia occurred as a consequence of Bright's disease. The patient was a female, aged 59, for eleven years an inmate of the

Rainhill Asylum, her mental condition being one of delusional mania. She suffered from fibroid disease of the kidneys, and had been in feeble health and confined to bed for some months previous to the attack now to be described. One morning the patient was found by the nurse unable to speak, and though in the course of two or three hours a certain amount of speech was regained, her articulation remained very indistinct, so that her words could only be partially understood. There was decided weakness, though not complete paralysis of right arm, but right leg was moved freely; tongue protruded straight; almost complete ptosis of left eye, partial ptosis of right; right eyeball directed out, and slightly up, left straight; right pupil 2 mm., very sluggish to light; left 3 mm., acts fairly well; knee-jerks normal; general mental hebetude. The following day she lay in a heavy, drowsy condition, though she could be roused to say a few words; right eyeball directed up and out, left out and a little down. Fair power had now been regained over right arm. Six days subsequently it was noted that she lay in a partially comatose condition, and could not be got to respond to questions; still complete ptosis of left eyelid; a tendency to conjugate deviation of eyes to left; *right arm now quite powerless*, and some deficiency of movement in right leg; plantar reflex and knee-jerk present on each side; temperature slightly sub-normal. Gradually became more comatose, and died ten days after the onset of the attack.

Autopsy.—The brain was found to be moderately wasted, exhibiting excess of sub-dural, sub-arachnoid, and intra-ventricular fluid; but the most careful examination failed to detect any naked eye lesion in any part of the organ; the vessels were in a very atheromatous condition. As regards the trunk, it will be sufficient to say that the pericardial layers were adherent with old adhesions; the left ventricle of the heart was hypertrophied; and the kidneys were markedly cirrhotic, presenting very typically the characters of the small red granular kidney, the right weighing only $1\frac{1}{4}$ oz., the left $1\frac{1}{2}$ oz.

The particulars of the following case, which comes under the same category, have been communicated to me by my friend, Dr. W. L. Mackesy, under whose care the patient was. B. K., aged 10 years, a bright, intelligent little girl, an inmate of an industrial school, had undergone, some months previous to the illness about to be described, amputation of the right lower limb through the middle of the thigh, in consequence of disease of the bone. The

operation was quite successful, and she regained her health and was able to get about on crutches. On the 23rd of October, 1886, she was found in the morning unconscious, and when seen by Dr. Mackesy, soon after, he learned that on the previous day she had complained of severe headache, and that for some little time previously the teacher had noticed that she seemed stupid at her lessons; a few days before she had secretly left off some of her underclothing. On examination she was found to be quite comatose, but there was no stertor or interference with the respiration; the pupils were equally dilated; pulse 120, weak and compressible; temperature, 102°; the face and hands had a puffy appearance. It was ascertained that no urine had been passed for twelve hours. The head was blistered, calomel administered, and poultices applied over the loins. On the following day the patient's condition was unchanged; a small quantity of urine had been passed, and this was found to be loaded with albumen. On the morning of the 25th consciousness had returned, but there was well-marked *right hemiplegia with complete aphasia*, and inability to protrude the tongue. During the next three days the patient's condition underwent gradual improvement; there was partial recovery of speech and of power in the right arm, and the albumen disappeared from the urine, which was passed freely. On the 29th the patient was not so well; she was very dull and had been vomiting. A spontaneous attack of diarrhoea supervened, which afforded relief. The following day, though very weak, she was almost convalescent; speech was quite distinct, and there was perfect power over the movements of the tongue and arm. Soon after, she was quite restored to health.

In this case there can, I think, be no doubt that the coma, following on the headache and mental dulness, was due to uræmia, of the existence of which the suppression of urine and the presence of albumen in the urine when it was passed is sufficient evidence; and the sudden onset of the hemiplegia and aphasia during the continuance of this morbid condition, without any other apparent cause, renders it highly probable that the paralysis was intimately connected with the uræmia. Until recently it has been asserted that the nervous disturbances incident on the uræmic condition are of a widespread character, paralytic symptoms, when they occur, being general rather than localised in their distribution, in consequence of the poisoned blood passing through and equally affecting all the nerve centres. That this is not invariably

so, the cases now cited and those quoted in a former report go to prove. In the present instance there was no pathological condition which would account for or give rise to the sudden hemiplegia and aphasia, except it be the sudden thrombosis of the cerebral veins. The transient character of the paralysis, the absence of respiratory troubles, and the rapid pulse exclude the possibility of hæmorrhage; while the sudden regainment of perfect motor power, without any resultant muscular stiffness, after such deep loss of consciousness and paralysis, renders it extremely unlikely that venous thrombosis—a not uncommon cause of such forms of paralysis in children—had anything to do with the symptoms. The subsidence of the paralysis coincidently with the free passage of the urine and the disappearance of the albumen from the latter, and the rapid relief following free purgation, further support the view that the uræmia was the cause of the paralysis, by producing general serous effusion, which in turn causes ischæmia in certain areas of brain substance, which is evidenced clinically by hemiplegia.

Mental Affections associated with Chronic Bright's Disease.—

At the same meeting of the Philadelphia Neurological Association at which Dr. Dercum brought forward his cases of convulsions and paralysis associated with chronic nephritis, Dr. Osler referred to several cases which had come under his observation, in which distinct mental symptoms occurred as a consequence of chronic renal disease. It is well known that certain mental phenomena do occur in connection with chronic nephritis besides simple uræmic coma. Dr. Ostler had already reported one case of violent mania in a man aged 42 years, the subject of Bright's disease. When brought to the hospital he had been maniacal for three or four days. He subsequently became comatose and died. A very interesting case was recently under his care in the University Hospital. A man was brought to the hospital on Thursday evening. He saw him on Saturday. He was then quiet, in a semi-dozing condition, but could be aroused, and gave a very intelligent account of himself. The whole clinical picture was that of chronic interstitial nephritis. He thought it not improbable that the man might pass into a condition of coma. There was nothing to attract special attention to his mental condition, and he did not regard his condition as critical. That night he got out of bed in the absence of the attendant, wandered about the ward, and finally jumped out of the window. It was subsequently learned that

before admission to the hospital he had been violent, requiring two or three men to hold him. This was not mentioned when he was brought to the hospital. He had no doubt that this was an instance of mental disturbance due to chronic nephritis. He was told by one of the physicians who had attended him that the man was full of delusions. He thought that his wife and others were persecuting him. He saw another interesting case in the practice of Dr. Mullin, of Hamilton, Canada. Here there was also a medico-legal question. It was, whether or not the man was in a condition to make a will. There was no doubt as to the existence of chronic Bright's disease. The mental condition was peculiar. He believed that his wife and others had designs upon his life, and it was with difficulty that he could be persuaded to take food. He thought that people were persecuting him. Although he gave a very intelligent account of himself, it was not considered advisable that he should make his will at that time. He was placed upon a somewhat more active treatment than he had previously received. This man subsequently did well; his mind had cleared, and he recovered sufficiently to get about and to make his will. It will have been noticed that in one of the cases recorded by Dr. Dercum there were, with the unilateral convulsions, at various times, periods of maniacal excitement and delusions of persecution.—(*Journ. of Nervous and Mental Disease.*)

The Weight of the Cerebral Hemispheres in the Insane.—Dr. E. Marandon de Montyel, Physician to the Asylum at Marseilles, discusses this question in the *Annales Médico-Psychologiques*, Nov., 1887, and summarises his conclusions as follows:—

1. Among the insane of all classes inequality of the cerebral hemispheres is the rule, equality the exception.

2. In neurotic insanity (*la folie névrotique*) the right hemisphere preponderates, while in paralytic dementia, by reason of the greater localisation of the lesions on the right side, the preponderance is in favour of the left hemisphere.

3. Sex does not appear to exercise a perceptible influence on the predominance of either hemisphere.

4. The inequality of the hemispheres in the insane is as marked as it is frequent; the differences in weight reach high figures.

5. These differences in weight increase from neurotic insanity to paralytic insanity, from paralytic insanity to idiocy, and from idiocy to epileptic insanity.

6. To avoid errors due to advanced age in cases of neurotic

insanity, it is important to confine observations to insane persons under sixty at the time of death.

7. The predominance of the right hemisphere in neurotic insanity increases with the age of the patient, its maximum of frequency occurring between the ages of 50 and 60.

8. In neurotic insanity the most marked difference in weight between the two hemispheres is met with in senile insanities.

9. In the insane the differences in the weight of the cerebral hemispheres far exceed, in the great majority of cases, those found in the case of persons of sound mind.

The Brain Weight in the Insane.—Dr. Bartels, of Hildesheim, in the *Allgemeine Zeitschrift für Psych.* contributes an article on this subject. He tabulates the findings of the brain weight of males and females in ten different psychoses. Accepting the average normal weight of a healthy brain to be 1,460 grammes in males and 1,320 in females (Henle and Krause), the following deviations in the various psychoses present themselves:—

	Males	Females	Average Weight in Grammes
1. Mania - - - -	27	—	1,423
	—	32	1,288
2. Melancholia - - -	74	—	1,437
	—	95	1,284
3. Periodical Insanity - - -	23	—	1,446
	—	15	1,255
4. Paranoia - - - -	115	—	1,416
	—	62	1,263
5. General Paresis - - -	276	—	1,353
	—	44	1,185
6. Acute Delirium - - -	5	—	1,385
	—	2	1,325
7. Epileptic Insanity - - -	70	—	1,421
	—	32	1,231
8. Idiocy and Imbecility - - -	27	—	1,335
	—	18	1,194
9. Secondary Dementia - - -	181	—	1,408
	—	124	1,263
10. Senile Dementia - - -	12	—	1,359
	—	6	1,200

Too much weight ought not to be placed on these deviations, for, as the author well says, in certain groups the number of cases is not sufficient to deduce a safe estimate. In paranoia and secondary dementia, which affect the individual in a large proportion of cases late in life, in which the brain itself would naturally begin to

diminish in weight, and in which the disease itself may have been of long standing, no reliable estimate could be attained. The author draws the following conclusions:—

1. All psychoses necessarily diminish the weight of the brain (? *Rep.*).

2. This diminution depends (a) on the age of the patient; (b) on the duration of the disease; (c) on the intensity of the disease.

(a) The diminution in weight is smallest in both sexes between twenty and thirty years of age; largest in males of seventy years of age, and in women of sixty years of age.

(b) The shorter the average duration of the disease, the smaller in general is the loss in brain weight, and *vice versa*.

(c) The deeper the disease affects the mental life of the individual, and in the one who shows the smallest ability for mental work, the greater is the loss of brain weight, and *vice versa*.

3. The diminution in females is larger than that in males by from $\frac{1}{8}$ to 1.6 per cent.

Microscopical appearances in the Spinal Cord and Nerves in a Case of Alcoholic Paralysis.—Dr. Briggs communicated this case to the New York Neurological Association. At the autopsy the body was found greatly emaciated; legs and thighs markedly flexed; muscles of the legs of a yellow colour, and apparently converted almost entirely into fat; muscles of thigh much less affected; spinal cord, nerve-roots, and trunks normal in appearance to the naked eye.

Microscopical appearances.—Spinal cord apparently normal, with the exception of slight sclerosis in the columns of Goll in the cervical region; nerve-roots normal. In one of the sacral nerves, before its exit from the spinal canal, was found a marked increase in the endometrium, with diminution in the number of the nerve-fibres, and an irregularity and indistinctness in these appearances. The right sciatic nerve showed these changes more marked. In the posterior tibial the process was even more advanced, and in this only an occasional nerve-fibre could be detected. Microscopically the gastrocnemius was composed almost entirely of adipose tissue, only here and there atrophied muscle-fibres were found. The small nerve-trunks in the muscle showed advanced degenerative neuritis, with comparatively little new growth of connective tissue in the nerves.

Peripheral Neuritis in Raynaud's Disease.—Dr. Wigglesworth communicated a case of this condition to the Pathological Society of London. Slight changes were found in the spinal cord, which were confined to the vesicular columns of Clarke, together with a slight thickening of the neuroglia, and a possible atrophy of some of the nerve tubules. Transverse section of the nerve-trunks revealed an overgrowth of the fibrous elements of the nerve, with atrophy and degeneration of the nervous elements. These conditions were unequally developed in different nerves; in the lower extremities the posterior tibial was found to be chiefly affected, and a drawing of its appearance is published. The epineurium is much thickened in all its parts; the perineurium is also greatly thickened, forming a series of richly-nucleated concentric laminæ, which in many cases encroach considerably upon the nerve bundles. The perineural lymph space is in many bundles distinctly broadened; the endoneurium shares in the general hyperplasia, and exhibits also a decided increase in the number of nuclei. The nerve tubules generally appear more or less atrophied and degenerated, the atrophy appearing to affect chiefly the myelin sheath.

The other nerves presented similar changes in greater or less degree, the epi-, peri-, and endoneurium being all hypertrophied, with hyperplasia of the nuclei and atrophy and degeneration of the nerve tubules.

This case shows that in some instances, at least, of that form of symmetrical gangrene, now known as Raynaud's disease, there occurs a peripheral neuritis, which may be of a profound type; it is possible, however, that the milder forms of the disease may be dependent upon a functional derangement of those parts which in the severer cases are the seat of organic change.

IV. NEURO-THERAPEUTICS.

On the Use of Galvanism in the Treatment of certain forms of Insanity.—Dr. J. Wigglesworth read an interesting paper on the subject before the Psychological Section of the British Medical Association in Dublin last August. By way of preface, he makes some introductory remarks upon the use of the galvanic battery, and after detailing a number of cases of different forms of insanity in which he tried this agent, he concludes as follows:—(1) That whilst the use of galvanism to the head is a proceeding which is certainly not going to revolutionise the treatment of insanity, this agent is, nevertheless, one that is capable of doing much good in

certain selected cases, and that by its judicious employment we may every now and then cure cases which would otherwise drift into hopeless chronicity. (2) The class of cases which offers the best field for the employment of this agent is that which includes examples of mental stupor and torpor—cases which are grouped under the specific designations of melancholia attonita, and so-called “acute dementia.”

Antipyrin as an Anodyne.—At a recent session of the Academy of Sciences, M. Germain See read a memoir on the antagonism of antipyrin to pain. The hypothermic property of the medicament now presents interest secondary to that of the remarkable influence it exerts upon the element of pain. In paroxysms of acute and chronic gout, in the attacks of mild forms of rheumatism, the pain disappears rapidly under the influence of sixty or ninety grains of antipyrin given every day for a week. But it is in nervous troubles, especially in which disturbance of sensibility occurs, that antipyrin produces its most marked effects. Facial neuralgia and migraines yield readily under its influence. The darting pains which mark the initial stage of locomotor ataxia are calmed by antipyrin not less than by acetanilide. The former substance has, over the latter, the advantage of being managed more easily and of being less dangerous. The agonising pains of heart disease, such as troubles of the aorta and the cardiac arteries, yield under the influence of sixty to ninety grains of antipyrin. This valuable medicine ought always to be administered in doses of fifteen grains at intervals of from one to three hours, in half a glass of ice-water. The most serious inconvenience in its employment consists in an eruption like scarlet fever, but which readily disappears. Experiments made by M. Gley upon animals show that antipyrin produces a veritable antagonism in the member into which it has been injected. It appears to act on the nerve terminations. However that may be, antipyrin is a most efficacious and harmless remedy for pain.—(*The American Practitioner*).

The Proper Use of Antipyrin.—Pavy's rules: If temperature does not exceed 103° F., divide thirty-one grains into three powders, and give one powder every half hour. If thermometer registers 104°, three doses, as before, of fifteen and a half grains each; for temperatures of 105° and above, sixty-two grains in four doses, half an hour apart. If stomach will not retain drug, give by rectum in thirty to forty-five grain doses, or hypodermically in a fifty per cent. solution.

On the Prognosis and Treatment of Locomotor Ataxia (Wiener med. Presse, 1887, Nos. 33-34).—Benedikt divides the cases of locomotor ataxia into several categories, whose prognosis differs widely. The first group, in which the prognosis is most favourable, consists of the cases which begin with atrophy of the optic nerve. This particular symptom is, it is true, incurable; but the course of the disease is slow, and extreme motor symptoms rarely develop. The second group is made up of the cases with prodromal gastric crises. In these the prognosis as to the development of motor symptoms is not so absolutely favourable as in the first group, but the motor symptoms subside in two-thirds of the cases. The third group contains the cases of paralytic dementia (ascendens) with complicating tabes. In this group it is the rule that the spinal symptoms are limited to the loss of pupil and tendon reflexes, and to the development of the Romberg symptoms (swaying when standing with eyes closed). That it is not a matter of indifference that the ataxia does not go on, even though the cerebral process progresses, is evident, since the care of such patients is much easier when the spinal symptoms subside. [May these be instances of cerebral ataxia?]

A fourth group with relatively favourable prognosis is made up of the cases in which the symptoms develop rapidly within a few weeks, and soon reach a high pitch of intensity. These cases are often maltreated, and hence do not recover. Antisyphilitic treatment, galvanism, and hydrotherapeutic measures are here of no use. The patients should have absolute rest, with the most antiphlogistic treatment. [May these be cases of neuritis?] A fifth group, with a fairly favourable prognosis, consists of tabetic patients in whom syphilis is the manifest cause of the disease. An atypical course of the case will awaken suspicion of syphilis, but the only criterion is the result of an antisyphilitic course of treatment. Such a course must be carefully conducted, routine injunctions being avoided. It may be stated that Benedikt does not accept syphilis as a universal factor in the causation of tabes. The sixth group, whose prognosis is unfavourable, is made up of the cases which present the typical picture of the disease, though even a few of these may recover. As to treatment, the author strongly recommends galvanism and hydrotherapy, giving, however, no sufficient details regarding the methods of applying these agents. He admits that great patience is needed, and that treatment must be kept up for a long while. In the

hyperæmic stage, which is present in the rapidly-advancing cases, ice to the back, absolute rest, wet cups, and the internal use of ergot and nitrate of silver, are the means recommended. In the syphilitic cases, hypodermic use of corrosive sublimate is advocated. He considers nerve-stretching as one of the most important means of treatment (a means, however, which has not found favour with any other neurologist of note, and which has been abandoned everywhere, excepting in Benedikt's clinic).

While it seems improbable that in any case where sclerotic processes have occurred in the spinal cord, true recovery from the symptoms of sclerosis can follow, it must not be forgotten that two such cases have been recorded by so good an authority as Schultze, of Heidelberg, in which, though the symptoms of tabes disappeared, subsequent *post mortem* examination showed the persistence of the lesion. These cases can be explained only upon the supposition of a vicarious action in the nervous system, the rôle of one set of fibres and cells being undertaken by another set.—(Dr. Allen Starr in the *Journ. of Nerv. and Ment. Dis.*).

HYSTERECTOMY.

In a paper submitted to the Paris Academy of Medicine for a prize, the following statistics of vaginal hysterectomy appear:—

		Operations	Cures	Deaths	Mortality
Czerny	- -	81	55	26	32.0
Duncian	- -	276	197	79	28.6
Duvellius	- -	59	54	5	8.3
Gusserow	- -	253	194	59	23.3
Haidlen	- -	52	33	19	36.5
Hegar	- -	257	197	60	23.0
Martin	- -	66	54	12	18.3
Matthews Duncan	-	276	198	78	28.0
Munde	- -	256	193	63	24.0
Olshausen	- -	36	29	7	19.0
Schroeder	- -	32	23	9	28.1
Schmidt	- -	6	5	1	16.6
		<hr/> 1,650	<hr/> 1,232	<hr/> 418	<hr/> 25.3

Thus, of 1,650 operations, the deaths number 418, being a percentage of 25.3 of the total number of operations.—*Bulletin de l'Académie de Médecine*, November 30, 1887.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—ROBERT M'DONNELL, M.D., F.R.S.

General Secretary—W. THOMSON, M.D.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—H. ST. JOHN BROOKS, M.D.

Sectional Secretary—H. J. BROOMFIELD, F.R.C.S.I.

Friday, January 6, 1888.

The PRESIDENT in the Chair.

Opening Address.

The PRESIDENT read an Address on Recent Advances in Macroscopic Anatomy.

Notes of some Nervous and Arterial Anomalies.

DR. AMBROSE BIRMINGHAM read the following notes:—

1st Case.—A spinal accessory nerve ending in the sterno-mastoid, without giving any branches to the trapezius, which was supplied by the 3rd and 4th cervical nerves.

2nd Case.—Buccal branch of inferior maxillary nerve absent; place taken by a nerve arising from the orbital branch of superior maxillary division of the 5th nerve, which pierced outer wall of orbit, and ran down to be distributed as a normal long buccal.

3rd Case.—Nerve larger than long pudendal, arising by two roots from back of sacral plexus, corresponding to 2nd and 3rd sacral nerves, piercing great sacro-sciatic ligament, crossing and communicating with long pudendal, distributed to skin of upper half of inner aspect of thigh.

4th Case.—Nerve to an axillary muscular arch, springing, without communicating with any other nerves, from the inner cord of the brachial plexus, close to the origin of the nerve of Wrisberg.

5th Case.—Small occipital nerve divided into two parts, posterior crossing occipital triangle obliquely, passing under trapezius, piercing the muscle two inches from its insertion, giving off no branches, and returning again to posterior border of sterno-mastoid to be distributed with the rest of the nerve.

6th Case.—Origin of median by three pairs of heads, in each pair one head came from inner, one from outer cord of brachial plexus, and between the heads passed the artery—1st pair high origin, intermediate in size; 2nd pair normal level, largest; 3rd pair long and slender, joining the others three inches down the arm.

7th Case.—Absence of nerve of Wrisberg arising from inner cord of plexus; place taken by branch of 1st dorsal nerve, which ran outwards between pleura and 1st internal intercostal muscle, pierced thoracic wall and reached axilla; further distribution same as normal nerve of Wrisberg (found three times).

8th Case.—Arterial anomalies at base of brain; left vertebral normal, right size of ordinary pin; both unite and are joined by a large artery nearly three-fourths diameter of normal vertebral, arising from internal carotid at cavernous groove, piercing dorsum sellae, joining basilar anterior to middle of its trunk, on same side posterior cerebral arising (apparently) from internal carotid through enlarged posterior communicating, and internal carotid slightly larger than fellow; left vertebral not enlarged.

The PRESIDENT said he had heard some express the opinion that they were tired of anomalies; but he had never experienced that feeling himself. Anomalies led to investigation, giving hints, too, upon many subjects. Many apparent anomalies led to taking statistical notes, with the result that what was at first recorded as an anomaly proved to be no anomaly at all, but represented either a normal or a frequent condition. The discovery of an apparently anomalous nerve often led to the more careful examination of the situation, and a nerve of smaller size might be found to be normally present in a place where its presence was unsuspected. The buccal branch of the fifth nerve from the superior maxillary division he knew to be rare. He had not himself come across a case of it. Sir William Turner had described the functions of the long buccal nerve, and brought forward arguments to show that it was a purely sensory nerve having no share in the supply of the buccinator muscle. When the buccal nerve had its normal origin, its fibres could be traced to the sensory root and not to the motor; and on cutting the facial nerve the buccinator became paralysed.

PROFESSOR CUNNINGHAM said he had seldom heard so many interesting and unusual anomalies described. Dr. Birmingham had presented them in the order of their importance. He had never seen the condition of the spinal accessory which Dr. Birmingham had mentioned, and the anomaly was all the more startling when the condition of the spinal

accessory in many of the lower animals was remembered—wandering down the back and picking up the different parts of the trapezius, and thus showing us in the clearest manner the muscle slips which were to be included under this name. With regard to the long buccal nerve, he had never noticed either an example of the anomaly which Dr. Birmingham mentioned, or that which Sir William Turner described. The President had alluded to it as a sensory nerve, indicating the physiological grounds for the opinion. There was another proof equally good—namely, by simply tracing the fibres which were uncontaminated by communication with the facial through the buccinator muscle. It would be found that they passed through the muscle, and ended in the mucous membrane. He was interested in Dr. Birmingham's remarks on the nerve-supply of the muscular axillary arches, having himself read a paper on the subject in Montreal describing two or three cases in which the nerve had been dissected. The President had also dissected that nerve in the dissecting-room of Trinity College, showing that it came, not from the internal cord of the brachial plexus, but from the internal anterior thoracic. Karl Bardeleben of Jena was the first to trace this nerve.

DR. BIRMINGHAM, in reply, said, as regards the nerve-supply of the axillary arch, the nerve came from the inner cord of the brachial plexus, and he left it there. However, if there was proof that the nerve came from the nerve of Wrisberg, his nerve might easily have been associated with it previously, and in springing from the cord have got dissociated, while if it were found that the nerve came from the internal anterior thoracic, his would run with it also. He could not speak definitely, but would be more careful with the dissection of the nerve if he met it again.

An Effect produced by Direct Stimulation of the Heart.

DR. PURSER made a communication on the results which follow direct stimulation by single induction shocks of the different parts of the heart of the frog. Attention was particularly called to the pause which is sometimes observed without the occurrence of any extra contraction, and to the conditions which must be fulfilled in order that this result shall be obtained with certainty.

First Dorsal Interosseous Muscle supplied by the Median Nerve.

DR. BROOKS read a short paper on a remarkable case of variation in nerve-supply that he had recently observed in the dissecting room of Trinity College, during the dissection of the palm of a hand. The branch of the median to the first lumbrical muscle was larger than usual, and, after supplying that muscle, pierced it, and united to form a nervous arch with a twig from that branch of the median which divides to supply the contiguous sides of the index and middle fingers. The latter twig had

no connection with the nerve to the second lumbrical. The arch thus formed by twigs from the median nerve lay under cover of the long flexor tendons of the index finger, and gave off in this situation two twigs to the metacarpo-phalangeal articulation of the index finger and a strong twig to the first dorsal interosseous muscle. The nerve was traced into the muscle, and was found to end chiefly in its distal part; the proximal part of the muscle was supplied by the normal branch from the deep palmar division of the ulnar. The ulnar twig communicated by two or three excessively fine filaments with the abnormal median twig in the substance of the muscle. A microscopic examination showed that there were not any "nerves without ends" in the loop above described. The two factors of the loop entered about equally into the composition of the nerve to the interosseous muscle. The author showed drawings of the macroscopic and microscopic appearance of the nerve; he was tolerably familiar with varieties of the nerves in the extremities, but had been quite unprepared for so great a variation as this. He believed it to be unique, as he had not met with any record of such a case. It appeared as if there were in the limb several main lines diverging from the brachial plexus, and meeting again at their terminations in the hand, and that at the points of divergence a shunt of fibres, as it were, might take place, and almost any nerve pass to its destination by an unusual route.

On the Distribution of the Cutaneous Nerves on the Dorsum of the Human Hand.

DR. BROOKS also read a paper on the above subject. He had been led to make these observations by some of Létievant's cases (*Traité des Sections Névreuses*, 1873), which showed that on section of any of the large nerves of the arm (median, ulnar, musculo-spiral) the area of distribution of the nerve was not completely paralysed, as would be expected from the ordinarily received description of the nerves, and, moreover, that the paralysis exhibited several degrees of intensity, the slighter effects extending beyond the region of distribution of the nerves. For example, the skin of the little finger partially paralysed by a section of the musculo-spiral nerve. Létievant explained these phenomena by "anastomoses" and "ébranlement des papilles à distance," p. 16, but that explanation did not appear satisfactory. The author believed that they were due to the areas of distribution of the nerves overlapping one another, and, in order to test this, he had in five cases removed the skin, superficial and deep fascia with the nerves included, from the back of the forearm and hand, and dissected the nerves from the deep surface under water. In all of these cases he had found the radial and dorsal branch of the ulnar nerves overlapping for a certain extent. In the case that he had examined with the greatest care they overlapped in their distribution for the extent of three fingers (index, middle, and ring), with a corresponding area

on the back of the hand. He had also succeeded in tracing filaments of the musculo-cutaneous and external cutaneous branch of the musculo-spiral overlapping the radial and ulnar; the musculo-spiral in one case reaching the metacarpo-phalangeal articulation of the little finger. With regard to the cutaneous supply of the fingers, some text-books represented the dorsal digital nerves extending uniformly as far as the ungual phalanges of the fingers. He did not think that such statements required to be seriously criticised. In Quain's "Anatomy," and in the larger Continental works, it was represented that the dorsal nerves extended to the nail only in the case of the thumb—the dorsal branches to the four inner digits extending only as far as the first inter-phalangeal joint, the palmar digital nerves curving round beyond that point to supply the fingers on their dorsal aspect. Henle stated very positively that in the case of the thumb the palmar (median) twigs did not reach the dorsum, and the same is stated in a standard English work dealing largely with anatomical facts (Hilton's "Rest and Pain"). The author had found that the dorsal nerves extended in the case of the thumb and little finger as far as the nails, in the index and ring fingers as far as the second interphalangeal joints, and in the middle finger only as far as the first interphalangeal articulation. He had found the palmar nerves taking part in the dorsal supply of all the fingers, not excepting the thumb; in several cases he had traced strong branches of the median passing under the thumb nail, and ramifying in the bed of the nail. [The author here drew attention to a diagram from Létiévant, showing the dorsum of the thumb profoundly affected by section of the median nerve.]

It was well known that the median and ulnar nerves encroached on one another's domains; some remarkable and instructive cases of this had been recently described by Dr. Hepburn, but he had not met with any record of the nerves overlapping, in the literature of the subject, except that in one of Henle's figures it was shown to a very slight degree, but was not described in the text.

Through the kindness of Mr. Wheeler, the author had had the opportunity of examining a patient in the City of Dublin Hospital who had undergone the operation of section of the ulnar nerve. Sensation was completely lost in the little finger, and half the ring finger, and over a corresponding area of the back of the hand. Over the greater part of the dorsum of the hand, as far as the base of the index finger, the sensation was very perceptibly dulled.

The paper was illustrated by a number of diagrams, and a dissection showing the overlapping of the nerves was exhibited.

DR. CUNNINGHAM said he was so fortunate as to have been able to look over Dr. Brooks' beautiful dissections, which involved enormous labour. There was not the least doubt that Dr. Brooks had made out a

perfectly new point in regard to the intercrossing of nerves. All are familiar with the great variation in the nerve-supply of the skin, but they considered hitherto that when one nerve advanced into the territory of another, the nerve so invaded retreated. Now Dr. Brooks had shown how completely erroneous in this respect their impressions were. The musculo-spiral nerve, extending down the back of the hand, was not an uncommon arrangement in the lower animals—extending in some not only to the roots of the digits, but taking on the supply to the middle digit, and the fingers on either side of it. Another point referred to by Dr. Brooks was with regard to the supply of the dorsum of the thumb by the median nerve. He thought at first he was familiar with it, but afterwards found it was not in the human subject that he met with it, but in the thumb of one of the marsupials. So here again was an analogy between the distribution of the nerves in the back of the hand in man and the lower animals.

Dr. Brooks, replying, said the point he contended for as new was the overlapping of the nerves; for it was already well known there was a struggle between the two nerves—sometimes the ulnar nerve going to the radial side, and the radial to the ulnar side.

The Section adjourned.

SECTION OF OBSTETRICS.

President—JOHN RUTHERFOORD KIRKPATRICK, M.D., F.K.Q.C.P.

Sectional Secretary—ANDREW J. HORNE, F.K.Q.C.P.

Friday, February 10th, 1888.

The PRESIDENT in the Chair.

Specimens exhibited by Card.

Mr. COLCLOUGH HOEY exhibited specimens of mole pregnancy and *fœtus compressus*. In the latter specimen the *fœtus*, from its appearance, seems to have reached to about the fourth and a half month of uterogestation. It was expelled a short time after the birth of a full time child, and before the expulsion of the placenta. There are some peculiarities presented by it worthy of notice, not the least remarkable of which is its attitude—both legs being extended on the abdomen, the left lying close to the head, on which an impression caused by the foot can be clearly seen. The right foot is rotated on the ankle-joint, so that the sole is approximated to the plantar surface of the opposite foot—the upper part of the right foot lying along a point corresponding to the malar bone. The left arm lies along the left side, with the hand hooked

at an acute angle to the arm, the palmar surface lying along the lower part of the back of the foetus. The right arm lay with the forearm bent on the arm, and the hand directed towards the back part of the head. The whole specimen would seem to be nothing more than a mass of adipocere. There was no trace of an umbilical cord, but the placenta was very large and apparently healthy. A second amniotic sac was not noticed. Minute inquiries failed to elicit the presence of any symptoms which might have led the patient to think there was anything peculiar in her condition. She delivered herself without difficulty, and made a good recovery.

The PRESIDENT mentioned that about two years ago he saw a case very similar to the one submitted by Mr. Hoey, in which the mummified or blighted foetus was presented first. It was a case of arm presentation, and when the head of the mummified foetus presented, it was very puzzling at first to know what it was. It came away with the cord shrivelled up, and the second child was afterwards delivered by version, alive and fully-formed, and the two placenta also came away. The two sacs and umbilical cords were perfect, one of them only being shrivelled up.

DR. DILL said foetus papyraceus was a very rare sort of pregnancy. In his lengthened midwifery practice he had seen only two instances of it.

Urethral Calculi.

MR. S. M. THOMPSON exhibited two large calculi, which he had removed by dilatation from a female urethra. The woman, who was fifty-two years of age, came to the South Union Hospital suffering from incontinence of urine and pain. On examining her he discovered a hardness above the urethra, and on further testing with a probe he concluded the existence of a stone. He dilated the urethra with a male dilator, and then tried to extract the stone with a small forceps, but the instrument continually bent. He then applied a large ordinary vaginal forceps, with which he was able to grasp and work out one calculus—the other came out more easily. The woman experienced immediate relief, and after a couple of hours the incontinence of urine ceased; and after about ten or twelve days' stay in the hospital, she went out quite well and strong. He had no one to assist him in the operation, and had to accomplish the dilatation as rapidly as possible. The woman had been suffering for above four months previously, and had got no treatment.

DR. MACAN said the stones were the most remarkable he had ever seen. Their extreme smoothness was most striking; they ought to be examined for the purpose of ascertaining of what they were composed. Professor Simon, of Heidelberg, had shown that, after the dilatation reached two centimetres the operator was on very dangerous ground.

If he (Dr. Macan) had to deal with such a case, he would rather extract by means of an incision in the septum. The facility of extraction was accounted for by the smoothness of the surface of the stones.

MR. DOYLE said the form of the stones was an indication that Nature had been working a process of dilatation.

Recent Specimens from the Rotunda Hospital.

DR. MACAN showed four specimens. The first was the head of a child born a few days since in the Rotunda Hospital. The woman had been undergoing a very protracted labour, and was brought into the hospital. On examination the head of the child was found to be encompassed with an elastic tumour filled with blood, and so disposed that it was difficult to detect the child's hair. Before delivery the child was known to be alive, although the foetal heart could not be heard. The child was delivered with some difficulty with a forceps, and was a very large one. The whole surface of the tumour was then of a bright crimson colour. Next morning it was incised, and the hair underneath was found to be cut off as sharply as if it had been shaved; he had never before seen anything exactly like it. The labour lasted twenty-four hours. While examining with his finger before delivery, the epithelium of the vagina came off under his finger, which he believed was due to an acrid secretion. The second specimen was an ovarian tumour, which was removed from a girl who was sent up to the hospital from the County of Westmeath. When she first came she was in the seventh or eighth month of pregnancy, and had a very large abdomen. The tumour afterwards got smaller from day to day, and when he (Dr. Macan) first saw it, it was not the size of his hand, and in fact it required some skill to be able to know that there was a tumour there at all. He thought this might have resulted from a rupture of a cyst, and the absorption of contained fluid. The next time he examined her the tumour was almost as big as ever, and he diagnosticated that another cyst had developed. When he operated he found an extremely short pedicle. The next specimen was a tumour removed from an unmarried woman, which had been eight or nine years growing. She was a miserable, wretched creature, and at first had objected to undergoing an operation, but afterwards changed her mind, and came to the Rotunda to be operated on. On the morning of the operation her temperature was 102.8° , and she had great pain in the abdomen. It was at one time hard to say whether the tumour was fluid or solid. After making a large incision he first got hold of an enormous tube, from which a quantity of pus escaped, and then the opening was closed by a wisp of hair, which showed the tumour to a dermoid cyst. She got on very well for some days, until suddenly one morning her temperature rose to 103° , her pulse being only 88—and a great swelling appeared in the right parotid region, from which it was obvious that she had parotitis on

that side. This was an unknown complication to him until his attention was drawn to the *British Medical Journal* of the 24th of December last, containing an account of seventeen cases, collected by Professor Bumm, of parotitis following ovariectomy. In nine out of thirteen of these cases suppuration followed, in two death resulted from inflammation, and in two others inflammation contributed to a fatal result. He (Dr. Macan) was unaware of the complication until Dr. Kidd told him that he saw the same thing after the operation of ovariectomy. The girl had since been going on extremely well, and that day she was up; but that evening her temperature was 101° , for which he failed to recognise any cause. The remaining specimen was an ovarian tumour, which he removed on the preceding day from a woman in the Rotunda Hospital. The diagnosis was very difficult, and the operation was approached with great doubt. She was examined under ether, and the posterior wall of the uterus was found to be very thin, but the tumour could be separated from the uterus with the sound. There was great difficulty in getting the tumour out through the pelvis, and there was an enormous pedicle, part of which was left behind. It was a ligamentous growth. At one time he thought of enucleating the tumour from the broad ligament, but he found that to be impracticable. There was a considerable quantity of pus in the tumour. Up to the present the woman was going on very well, the only danger being that some change might take place in the position of the pedicle that had been left behind.

Successful Removal of a Large Fibroid Tumour.

DR. M'MORDIE read a paper on the successful removal of a large fibroid tumour.

DR. ATTHILL said the results of the operation in such cases were, as a rule, more uncertain than in operations for ovariectomy. In what condition were the ovaries?

DR. M'MORDIE—They were enlarged.

DR. MACAN said he believed the intraperitoneal operation to be the best one. When the tumour went down to the broad ligament there would be great tension on the abdominal walls before it would be possible to put on a clamp. He admitted that the same results could not be got from the intraperitoneal operation as were obtainable from the outer operation. He saw Schroeder remove a much larger tumour than the present one, by opening the abdominal wall and uterus, and afterwards sewing them up. In such an operation as that, when the woman recovered she was practically cured. Of the cases upon which he (Dr. Macan) had operated he had saved only one.

DR. BARBOUR, of Edinburgh, said Apostoli's method had been tried in that city, but the cases had not been long enough under observation to yield any definite result. As to its diminishing the size of the tumour,

that consequence had followed in one or two cases, but not in several others. In his opinion, too much was expected from the electrical operation.

Report of the Gynæcological Department of the Rotunda Hospital.

DR. ALFRED J. SMITH read the above Report. [It will be found in the Number of this Journal for May, 1888, Vol. LXXXV., page 392.]

DR. ATTHILL said the proportion of cases of hæmatocele appeared to be unusually large. He was glad to find that cases of abdominal section were increasing in number. He would not say that in any of the 105 cases recorded the curette had been used injudiciously; but he thought there was a tendency to resort to it too often. He thought that in cases of uterine cancer it merely aggravated the symptoms, and in some cases accelerated death. For the purpose of washing out he thought that Varry water was as good as the solution of carbolic acid.

DR. M'MORDIE said, as to the curette cases, it was possible that in some of them other treatment would have been equally successful, but the results seemed to be on the whole satisfactory.

DR. MACAN said, as to curetting, he thought that, in cases of hæmorrhage with foetid contents of the uterus, the method from its expedition had a decided advantage over dilatation and removal by the finger. They did not say that cases were not cured without curetting; they only said that cures were effected a great deal more quickly by the curette. A most interesting point in the report was the absence of the occurrence of tubes, which to a great extent might be accounted for by the absence of gonorrhœa. He only regretted that he had not been more energetic in the use of the curette in cases of cancer than he had been, because of the improved condition and ease it gave the patients before they died. The mortality in case of hæmatocele had been increased by the inclusion under that head of cases of extra-uterine foetation.

DR. ATTHILL remarked that he had found iodised phenol the best and safest thing for injection into the uterus.

The Section adjourned.

Friday, March 16th, 1888.

Uterine Cervical Dilator.

MR. DUKE exhibited a uterine cervical dilator, constructed on a new principle and intended for rapid dilatation.

DR. MORE MADDEN said he had seen Mr. Duke's dilator used with good effect in some cases of stenosis of the cervix in his hospital; and if members of the Section used it he believed they would admit its efficiency in appropriate cases.

The Treatment of Sterility and Obstructive Dysmenorrhœa.

DR. MORE MADDEN read a paper on the above subject. [It will be found in the Number of this Journal for April, Vol. LXXXV., p. 297.]

DR. W. J. SMYLY believed that the frequency of stenosis had been greatly exaggerated; nor could he approve of the method which had been suggested for its relief. As to the catheterisation of the Fallopian tubes it would require some very convincing arguments to induce him to believe that that could be accomplished, excepting under very favourable conditions.

DR. MASON said there was no doubt that obstructive dysmenorrhœa complicated with sterility was an exceedingly common complaint, and was a cause of great physical suffering and mental trouble. He thought Dr. More Madden's treatment of stenosis uteri a little energetic. He (Dr. Mason) held that once the cervix was divided bilaterally there was no necessity for dividing it any more; and the use of Dr. Madden's dilator was, he thought, calculated to cause a danger of pelvic inflammation. The treatment he (Dr. Mason) ordinarily followed was to divide the cervix bilaterally for its entire length, and to enlarge the opening of the os externally with a scalpel, and then to apply some astringent—perchloride of iron—in some cases, and to plug the vagina in others. A number of the women operated on for this disease became pregnant afterwards, but that number was not large in proportion to the number of operations. The number of cases relieved by operation was, however, large; a fair prospect of cure might be held out to every patient operated on for dysmenorrhœa. He was disappointed at not hearing whether Dr. More Madden had tried electrolysis.

DR. ATTHILL said the first question was—Did stenosis of the cervix ever *per se* cause dysmenorrhœa? He was inclined to answer that question in the negative. He had seen instances in which the os uteri was so small that he could get only an ordinary surgical probe into it, and in which, nevertheless, there was no dysmenorrhœa. But that they might have cases of dysmenorrhœa indirectly depending on a small pinhole os uteri and a conical cervix was perfectly true. He also totally denied that a small cervix was *per se* a cause of sterility. In cases of small os uteri, where there was no dysmenorrhœa, the uterus and cervical canal were nearly always what was termed infantile or rudimentary, and menstruation in those cases was nearly always scanty, but in the main perfectly painless. But in nearly every case of stenosis of the uterus in which pain exists there was a more or less unhealthy condition of the uterine mucous membrane, which was vaguely termed uterine catarrh—the catarrh being a symptom, and not a cause; the latter being some form of intra-uterine disease. He looked on division or dilatation of the cervix in those cases as the first step towards the cure of the

dysmenorrhœa, and consequently the first step towards the cure of sterility. In many cases he divided the cervix, and treated the uterus secondarily for sterility, and very often with great success, where there was no dysmenorrhœa at all. It was his opinion, and for many years had been, that the cases of dysmenorrhœa and sterility in which there were a conical cervix and small os could never be cured without first dividing the cervix. But division—or dilatation, if that were preferred—was a step towards completing the cure, the *rationale* being that by making the cervix uteri free the escape was allowed of the pent-up discharges, which otherwise caused irritation and pain. With respect to the modes of making the uterus wide, in the first place he entirely disapproved of dilatation as a cure. He had seen it tried over and over again, and the patients pronounced to be cured because they were free from the dysmenorrhœa, and after a couple of months all the symptoms would return. He differed entirely from Dr. Madden and Mr. Duke as to the mode of treating these cases. He never used the metrotome. His method was to divide the cervix very nearly to the floor of the vagina, either with an ordinary sharp-pointed scissors or a knife, and that invariably enabled them to ascertain in all cases whether there was uterine catarrh or not. He believed that dilatation of the os internum by any means was hardly ever called for. He looked on the process suggested by Dr. More Madden as highly dangerous. As to inserting any instrument, such as those exhibited, into the Fallopian tube, he believed it must have been more a matter of accident than anything else.

DR. HEUSTON said it would be anatomically impossible to get the instrument exhibited into the normal Fallopian tube.

DR. MORE MADDEN (in reply) referred to the various objections which had been urged against his views and practice by three or four gentlemen for whom he entertained much respect. In conclusion, however, he still ventured to believe that if those gentlemen were to see the cases referred to in his hospital, and to witness there the results of the methods of treatment described in the paper he had just read, they might possibly be induced to modify very considerably the somewhat hastily formed opinions they had expressed on his humble contribution to the discussion of a difficult and important subject—that subject, moreover, being one which of itself should not be unworthy of the most careful and unbiassed consideration of every gynecologist.

Notes on Five Cases of Abdominal Section.

MR. O'CALLAGHAN read the following notes on five cases of abdominal section :—

CASE I.—*Pyosalpinx with Tumour* (age twenty-six).—On opening abdomen found tube on point of rupture bound down with extensive adhesions, with intra-ligamentous tumour growing from uterus and filling

out the broad ligament. Aspirated tube and washed it out with strong carbolic lotion. Dr. William Smyly agreed with me that it would be wrong to attempt removal of tumour or the tube under the circumstances. Closed wound, which healed by first intention. Marked improvement in this case; died in nine months after; tumour proved malignant.

CASE II.—*Fibro-sarcoma* (age seventeen).—Tumour presented in right side, with history of rapid growth in six months. On opening, found a large nodulated tumour attached to the outer margin of broad ligament. I enucleated this, hæmorrhage at this stage being very brisk; but the capsule being very thin from size of tumour, I was able to shell it out quickly; bleeding easily controlled by pressure with sponges, and, tying tube and bed of tumour with Chinese silk, as used by Mr. Lawson Tait, washed out peritoneum, closed wound without a drain, and healed by first intention, with normal temperature throughout. Tumour weighed 3 lbs.

CASE III.—*Ovarian Cysts with Cancer of Peritoneum* (age fifty-two).—On opening abdomen, found large cyst adherent to anterior wall of the peritoneum, which was studded with white ivory-like nodules. After emptying cyst and trying to separate it from peritoneum, found it was impossible; it broke off at the adherent portion like wet blotting-paper; pedicle was perfectly sound. Posterior to this large cyst there was a smaller, which I also removed. Pedicles tied with silk and Staffordshire knot, as taught by Mr. Tait; wound healed nicely; patient sank from exhaustion in sixty hours. There was nothing in this case to point to malignant disease, and had I seen her two months earlier I would not have to record her death, as it was quite evident malignant trouble was secondary in the tumour, and of *very recent date*.

CASE IV.—*Parovarian Cyst* (age thirty).—Menstruation regular; sent me as case of ascites. On opening abdomen, found large cyst; no adhesions, with very slight pedicle. Used Mr. Tait's trochar, and tied with silk. No drain; wound healed by first intention; temperature normal throughout.

CASE V.—*Strangulated Umbilical Hernia* (age fifty-six).—Old hernia strangulated, 36 hours; reduced by abdominal section, and did a radical cure. I refer to this only incidentally, as I intend reading a special paper on this case at a future date.

Dr. ATTHILL said Mr. O'Callaghan had exhibited both great courage and great surgical skill in dealing with the cases. He had made the very best he could of difficult cases.

SECTION OF PATHOLOGY.

President—C. B. BALL, M.D.

Secretary—J. B. STORY, F.R.C.S.I.

Friday, June 1st, 1888.

DR. ANTHONY H. CORLEY, President, R.C.S.I., in the Chair.

Case of Peritonitis from Perforation.

MR. M'ARDLE communicated a case of peritonitis from perforation, and commented upon the cause of death in such cases.

DR. JAMES LITTLE said there was one observation of Mr. M'Arde to which he wished to direct attention. It should never be forgotten that in these cases most important appearances would have altogether been lost sight of at the time when a *post mortem* was made. On more than one occasion in cases of the kind he had opened the abdomen during life; and when he afterwards opened the abdomen in the same cases after death, most important appearances, which had indicated hyperæmia and inflammation, short of actual effusion of lymph, had altogether disappeared. It was therefore rash to conclude as to what existed in the abdomen during life from what one found there after death. Of course, if actual adhesions took place, and plastic lymph was poured out, those evidences would exist after death; but the most active hyperæmia might be present during life, and no trace of it be visible on the *post-mortem* examination.

The CHAIRMAN said the paper raised the question as to how far, in such cases, death was attributable to shock to the nervous system. If that were so to any extent it might preclude surgical interference with so important a cavity as the abdomen, because the immediate effect of it might be to augment the efficacy of one of the causes of death. If, on the other hand, death exclusively resulted from absorption of materials effused from the peritoneal cavity, or from putrefactive gases, which would interfere with the heart's action, the objection to operative interference would not arise.

MR. M'ADLE, in reply, said he had not made sufficiently plain the point adverted to by Dr. Little. In the case of stomachic perforation he had to deal with symptoms which tallied exactly with the introduction of sepsin pure and simple, into the peritoneal cavity, and also with the symptoms which resulted from septic absorption in any place. In his detail of the case he mentioned that immediately on the perforation of the stomach taking place collapse occurred; but that collapse was afterwards completely recovered from, and the patient became conscious and

fairly vigorous. But there afterwards ensued the same symptoms that were obtained by the injection of sepsin. He agreed with Dr. Little that the peritoneum and the contents of the peritoneal cavity changed materially after death. He had opened the abdominal cavity a fair number of times for inflammatory conditions; he never saw anything capable of disappearing that could do any harm. Inflammation of the peritoneum might do very little harm, and, at all events, would not produce death. Hyperæmia alone would not do anything like account for death. There was another reason why he hesitated to regard any of those things that were capable of disappearing as likely to cause death. Within the last five or six years it had become the custom, in cases of peritonitis that seemed to be beyond recall, to open the abdominal cavity and wash it out; and if the contents that produced fatal results were got away the patients recovered in a large majority of the cases. This had been done in a number of cases within the last three years; and in 70 per cent. of cases which if left alone would have ended fatally, there had been recovery after the washing out of the abdomen. In the perforation of the stomach case which he had brought forward no fæcal gas from the lower bowel got into the peritoneal cavity. The patient no doubt got a shock; and if in such cases a large amount of material were extruded into the peritoneum inflammation would be set up; but it was the ultimate development of the septic materials that produced the fatal result. But in the case of intestinal perforation—and he had lately had experience of six of such cases—the collapse that occurred continued persistently from the beginning to the end of the case; and he attributed it to the effusion from the intestines of gaseous contents—chiefly sulphuretted hydrogen. It was certain that now-a-days, for the first time, they were beginning to recognise the fact that the removal of certain contents from the peritoneal cavity, in cases like those under discussion, would be followed by recovery.

DR. FINNY requested leave to make an observation, notwithstanding that the discussion had closed. He understood Mr. M'Ardle to say that it had been found during the last five or six years that in 70 per cent. of the cases of acute penetrative peritonitis, in which operative interference had been resorted to, there had been recovery. According to his recollection the facts were quite of an opposite character. In cases of chronic peritonitis, where there was purulent discharge, good results from operative interference might be hoped for; but according to his recollection, in acute cases attended with perforation of the stomach or intestines, any such proceeding had been followed by death.

MR. M'ARDLE explained that his statement had reference only to cases of septic peritonitis, which were not perforative.

Case of Pyæmia of Dental Origin.

DR. A. W. BAKER communicated a case of Pyæmia of Dental Origin. [It will be found at page 6.]

DR. LITTLE said he believed physicians and surgeons in ordinary practice were not sufficiently alive to the possibility of various troubles—neuralgic, cerebral, and gastric—resulting from infection coming from the teeth. He had seen three cases of the kind within the last three or four years. One was that of a young man whom he found suffering from acute phthisis, and he only lived a short time. At first his relations had not thought that there was anything seriously wrong with him, because he only had a bad tooth; but inflammation began at the root of the tooth, and as the young man became worse he (Dr. Little) was sent for. He found that he had a large cavity in one lung, and the case ended fatally. It was the impression of his family that a connection existed between the alveolar inflammation and the state of his health otherwise; and he (Dr. Little) thought it quite possible that that connection did exist, and that the ailments were not merely coincident.

DR. BAKER, in reply, said he had never seen any case in which phthisis could be traced to alveolar inflammation.

Locomotor Ataxy.

DR. FINNY exhibited sections of the spinal cord (made by Dr. Henry T. Bewley), displaying the pathological changes found in locomotor ataxy, with certain peculiarities as to the distribution and extent of the sclerosis.

The patient had died in Sir Patrick Dun's Hospital, to which he was admitted as a pay-patient at the age of thirty-eight, in December, 1885, of emphysema and cardiac dropsy, with a history of tabes of some ten years' standing.

He had been under Dr. Finny's observation three years previously, and had exhibited at that time the following features of the disease, which were still better marked in 1885:—

Sensory Disturbances.—Diminution of tactile sensibility in the legs and arms, but more particularly in the forearms. He was unable to state where his feet were, when in bed, until he struck the foot-board with them; and on one occasion, while pinning on his left cuff, he passed the pin through the flesh of his wrist and was not aware of it, until finding the cuff was fixed, he tore away the flesh by pulling it down.

He had some paræsthesia of the fingers, and described a sensation of great heat in the tips of the right hand, and said that their moisture would at times rise as steam from them. Neuralgic pains were occasionally present in both legs and arms, but these were not by any means a prominent symptom.

Motory Disturbances.—Unsteadiness in walking and in turning round: difficulty in maintaining the equilibrium while standing with the eyes closed, or on looking up at a height. There was no *ataxic* gait, the gait being that more of uncertainty and debility. He had great difficulty in walking in the dusk. He experienced great difficulty in buttoning his clothes, more especially behind him.

Reflexes.—The patellar reflexes were absent, and the Argyll-Robertson phenomenon was sufficiently marked, though the pupils were not markedly contracted.

The Sexual Reflex.—At the time of his last illness the sexual appetite was not inordinate, though early emission followed upon excitement; but for many years preceding it—as early as twelve years of age—the sexual desire was greatly increased, and venery and masturbation were immoderately practised.

There was no distinct syphilitic history, though he had venereal at the age of eighteen; and there were no appearances of scars, or of tertiaries. The patient's whole history pointed to a life of sensuality and alcoholism. The notable features in his case were—(1) early and immoderate sexual appetite; (2) the slight amount of tabetic gait; (3) the greater implication of the cervical region of the cord.

Post-mortem Appearances of the Cord.—Diffuse spinal meningitis, more especially of the posterior aspect of the cord, and sclerosis involving the cervical region in the highest degree, and to a less degree the dorsal and lumbar regions. The posterior root-zones are well defined by the pathological changes, and more or less involved are also the postero-median columns. The disease is mainly limited to the postero-external columns in the lumbar and dorsal regions, but in the cervical the postero-median, as well as the root-zones, are involved to a greater or less extent of symmetry. There are no evidences of ascending degeneration, such as is usual in cases where the lumbar bulb is the seat of disease, and the sclerotic changes were separated from the gray matter of the posterior commissure and basis of posterior cornua by symmetrical well-defined bands of healthy nerve-fibres. A similar condition is well depicted by Dr. Gowers in his "Diseases of the Nervous System," Vol I., p. 310.

As it is unusual for death to occur so early in a case of tabes, the specimens possess another interest, as they exhibit the disease in a less pronounced form and extent than is commonly met with in more chronic cases.

DR. BEWLEY exhibited microscopical specimens of the cord in the case brought forward by Dr. Finny, and mentioned that the disease affected the upper cervical portions of the cord more than the lumbar portions. The case was in that respect peculiar. There was another peculiarity which he had not seen in any drawings of cords affected by locomotor ataxy—namely, that in the cervical region the posterior third

of the internal part of the postero-internal column was sclerosed, the middle portion was not sclerosed, and the anterior portion was again sclerosed. The posterior third derived its ascending fibres from the lumbar region, in which there was some disease, and those fibres were consequently degenerated. The dorsal region was not much diseased. The middle third containing fibres from that portion of the cord was fairly healthy. The anterior third containing ascending fibres from the diseased cervical region was much sclerosed.

Separation of the Coracoid Epiphysis of the Scapula.

The SECRETARY read a paper by DR. E. H. BENNETT, who was absent, on a case of separation of the coracoid epiphysis of the scapula.

Cirrhosis of the Liver and Thrombosis of the Portal Vein.

DR. BEWLEY submitted a case of cirrhosis of the liver and thrombosis of the portal vein. The specimens were taken from a man, aged sixty, who had enjoyed fairly good health, with the exception of occasional attacks of bronchitis, until the 18th or 20th of last March. First piles came on and gave him considerable trouble. Then his feet swelled, and his legs became cedematous. Afterwards his abdomen began to swell. He lost flesh, strength, and appetite, and his abdomen and legs rapidly increased in size. After about two and a half weeks jaundice came on, and on the 7th of April he was admitted into the Adelaide Hospital, under the care of Dr. Beatty. He was then extremely weak and considerably emaciated. His abdomen was extremely large, and contained a great deal of ascitic fluid. His circumference round the umbilicus was $44\frac{1}{2}$ inches. On account of the accumulation of fluid it was not possible to make thorough examination of the viscera; but it was apparent that the upper and lower borders of the liver were normal—at least nothing abnormal could be discovered below the costal arches. The spleen did not appear to be very large. He had slight bronchitic râles and also a mitral systolic murmur, but there was not much engorgement of the veins of the neck. His urine had been very scanty for three weeks before his admission, and at the time he came into the hospital presented a slight amount of bile pigment. On the 12th of May he was tapped. Up to that time it was uncertain whether it was cirrhosis or cancer of the liver that he had. When the tapping was performed the fluid that came away was ascitic and largely coloured with blood. A hard nodulated mass was then felt under the right costal arch, extending out to the epigastrium. The diagnosis then arrived at was that it was cancer or some malignant disease of the liver. At the tapping $18\frac{1}{2}$ pints of fluid were withdrawn. His abdomen refilled; he grew weaker and weaker, became unable to take food, and died on the 21st of May. On a *post mortem* his abdomen was found to be again immensely distended with

fluid, the quantity being between two and three gallons. This fluid was extremely bloody, and from the deeper portions of the peritoneal cavity large soft blood-clots came. The liver, which weighed $4\frac{1}{2}$ lbs., was found to be in a curious condition. The left lobe presented very typically the characters of extreme cirrhosis, being extremely hard, and converted, for the most part, into bands of grayish dense fibrous tissue. The right lobe was largely increased in size from above downwards, and was bright yellow-coloured, the yellow-coloured part being marked off by a distinct line from the gray cirrhosis in the neighbourhood. This yellow part was perfectly soft, while the left lobe was like a mass of leather. About half of the right lobe, at all events, was in this peculiar soft yellow condition. The trunk of the portal vein was filled for an inch or two with a soft clot; but the walls of the vein were perfectly healthy, and the vein at some distance from the liver was healthy also. The gall bladder and bile duct were full of healthy bile, and were all right. The other viscera were healthy, except that there was some thickening of the mitral valve, and that the lungs were somewhat emphysematous. The idea they conceived was that there had been thrombosis of the portal vein, and that the blood passing slowly through the vein clotted for some distance back. The branch to the right was more firmly clotted than the branch to the left, and the tissue of the right lobe had become almost necrotic from the interference with the blood-supply. The sections did not show any necrosis of the soft diffuent tissue, but owing to the amount of obstruction to the circulation it was softened and on the way to necrotic change.

The Section then adjourned till next November.

SALOL AS AN ANTI-RHEUMATIC.

BIELSCHOWSKI (*Therap. Monatschrift*), as the result of a long series of experiments, carried out in the Allerheiligen Hospital, Breslau, considers salol a specific for rheumatism, and much superior to salicylic acid or the salicylates. Exanthemata, perspiration, or digestive troubles are never observed, and only in one case a slight ringing in the ears. Of twenty-seven cases treated with salol, nineteen were promptly and completely cured.—*Therapeutic Gazette*, December, 1887.

ANTISEPTIC POWDER.

B. IODOFORM, quinine, benzoin, carbonate of magnesium, which has been saturated with eucalyptus oil—of each equal parts. Powder and mix the ingredients. Of this powder, a small quantity is to be dusted over unhealthy ulcers.—Dr. Lucas-Championnière, *Montpellier Médical*, October 16, 1887.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, May 19, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	April 28.	May 5.	May 12.	May 19.		April 28.	May 5.	May 12.	May 19.
Armagh -	25·8	25·8	25·8	15·5	Limerick -	31·0	17·5	21·6	24·3
Belfast -	28·5	28·9	25·0	26·2	Lisburn -	48·3	14·5	38·7	33·8
Cork -	19·5	26·0	24·7	18·8	Londonderry	30·3	23·2	16·0	10·7
Drogheda	21·1	38·1	21·1	16·9	Lurgan -	25·7	46·2	5·1	46·2
Dublin -	30·3	21·4	22·4	22·9	Newry -	24·6	21·1	28·1	7·0
Dundalk -	48·0	30·6	9·0	30·6	Sligo -	14·4	19·2	19·2	24·1
Galway -	30·3	20·2	23·5	13·4	Waterford -	44·0	41·7	18·5	23·2
Kilkenny	12·7	38·1	12·7	21·1	Wexford -	38·5	29·9	38·5	12·8

In the week ending Saturday, April 28, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 17·5), was equal to an average annual death-rate of 18·9 per 1,000 persons living. In Glasgow the rate was 24·3; and in Edinburgh it was 18·2.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 29·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in eight of the districts to 20·7 in Armagh—the 5 deaths from all causes registered in that district comprise 3 from whooping-cough and 1 from diarrhoea. Among the 124 deaths from all causes registered in Belfast are 7 from measles (being 2 under the number from that disease in the

preceding week), 1 from scarlatina, 3 from whooping-cough, 2 from simple-continued fever, and 4 from diarrhoea. Among the 10 deaths in Lisburn are 3 from measles; and the 5 deaths in Lurgan comprise 3 from the same disease.

In the Dublin Registration District the births registered during the week amounted to 224—113 boys and 111 girls—and the deaths to 213—106 males and 107 females.

The deaths represent an annual rate of mortality of 31·5 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 30·3 per 1,000.

Twenty-six deaths from zymotic diseases were registered, being 9 over the number for the preceding week, but 4 under the average for the 17th week of the last ten years. They comprise 3 from measles, 7 from scarlet fever (scarlatina), 1 from typhus, 5 from whooping-cough, 1 from diphtheria, 4 from enteric fever, 1 from erysipelas, &c.

No fresh cases of small-pox were admitted to hospital during the week; 3 patients were discharged, leaving 4 as the number of cases of the disease in hospital on Saturday, April 28.

Thirteen cases of scarlatina were admitted to hospital, being 4 over the admissions for the preceding week; 9 patients were discharged, and 57 remained under treatment on Saturday, being 4 over the number in hospital at the close of the previous week.

But 2 cases of typhus were admitted, being 2 under the admissions for the preceding week, and 5 under the number for the week ended April 14. On Saturday the number of typhus cases in hospital had fallen to 25, 17 patients having been discharged during the week.

The admissions to hospital include also 2 cases of enteric fever; 16 cases of that disease remained under treatment on Saturday.

Forty-seven deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, and 2 in excess of the average for the seventeenth week of the last ten years. They comprise 25 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 5, the mortality in twenty-eight large English towns, including London (in which the rate was 17·4), was equal to an average annual death-rate of 18·7 per 1,000 persons living. In Glasgow the rate was 22·0; and in Edinburgh it was 21·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 25·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in eight of the districts to 25·7 in Lurgan. The 9 deaths from all

causes registered in the last-named district comprise 5 from measles. Among the 126 deaths from all causes registered in Belfast are 6 from measles (being 1 under the number from that disease in the preceding week), 5 from whooping-cough (an increase of 2 as compared with the number in the preceding week), 2 from diphtheria, and 1 from enteric fever. The 40 deaths in Cork comprise 4 from measles, 1 from typhus, and 2 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 198—98 boys and 100 girls—and the deaths to 147—70 males and 77 females.

The deaths represent an annual rate of mortality of 21·7 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 21·4 per 1,000.

Only 15 deaths from zymotic diseases were registered, being 11 under the number for the preceding week, and also 11 under the average for the eighteenth week of the last ten years. They comprise 1 from measles, 7 from whooping-cough, 2 from enteric fever, 1 from diarrhœa, 1 from dysentery, &c.

No new cases of small-pox have been admitted to hospital for the last fortnight. There was but one case of the disease in hospital on Saturday, May 5, three patients having been discharged during the week.

Seven cases of scarlatina were admitted to hospital, being 6 under the admissions for the preceding week. Eight patients were discharged during the week, leaving 56 as the number in hospital on Saturday.

Two cases of typhus and 4 of enteric fever were admitted, against 2 cases of each admitted in the preceding week; 21 cases of typhus and 17 of enteric fever remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 36, being 11 under the number for the preceding week, and 7 under the average for the eighteenth week of the last ten years. The 36 deaths comprise 15 from bronchitis and 15 from pneumonia or inflammation of the lungs.

In the week ending Saturday, May 12, the mortality in twenty-eight large English towns, including London (in which the rate was 16·6), was equal to an average annual death-rate of 17·6 per 1,000 persons living. In Glasgow the rate was 24·3; and in Edinburgh it was 21·2.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 22·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying

from 0·0 in Londonderry, Newry, Drogheda, Wexford, Dundalk, Sligo, and Armagh, to 6·7 in Galway—the 7 deaths from all causes registered in the last-named district comprising 1 from measles and 1 from typhus. Among the 109 deaths from all causes registered in Belfast are 4 from measles (being 2 under the number from that disease in the preceding week), 1 from scarlatina, 3 from whooping-cough, 2 from enteric fever, and 2 from diarrhoea. The 38 deaths in Cork comprise 1 each from typhus, whooping-cough, and diarrhoea. Among the 16 deaths in Limerick are 1 from typhus and 1 from whooping-cough; and the 8 deaths in Waterford comprise 1 from typhus and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 192—106 boys and 86 girls—and the deaths to 156—79 males and 77 females.

The deaths represent an annual rate of mortality of 23·0 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 22·4 per 1,000.

Nineteen deaths from zymotic diseases were registered, being 4 over the number for the preceding week, but 10 under the average for the nineteenth week of the last ten years. They comprise 1 from measles, 4 from scarlet fever (scarlatina), 1 from typhus, 9 from whooping-cough, 1 from enteric fever, 1 from dysentery, &c.

The only small-pox patient in hospital on Saturday, May 5, was discharged in the course of this week. No cases of the disease have been admitted to hospital during the last three weeks.

Seventeen cases of scarlatina were admitted to hospital, against 7 admissions for the preceding week, and 13 in the week ended April 28. Ten patients were discharged during the week, and 63 remained under treatment on Saturday, May 12, being 7 over the number in hospital at the close of the preceding week.

The other admissions to hospital comprise no case of typhus, and but 1 of enteric fever; 10 cases of the former and 13 of the latter disease remained under treatment in hospital on Saturday, May 12.

Deaths from diseases of the respiratory system, which had fallen from 47 in the week ended April 28 to 36 in the following week, fell last week to 20, which number is 21 below the average for the corresponding week of the last ten years. The 20 deaths comprise 15 from bronchitis and 2 from pneumonia or inflammation of the lungs,

In the week ending Saturday, May 19, the mortality in twenty-eight large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 18·9 per 1,000 persons living. In Glasgow the rate was 22·1; and in Edinburgh it was 20·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in Galway, Newry, Kilkenny, Drogheda, Wexford, Dundalk, and Armagh, to 20·5 in Lurgan. The 9 deaths from all causes registered in the last-named district comprise 4 from measles. Among the 114 deaths from all causes registered in Belfast are 6 from measles (being 2 over the number from that disease in the preceding week), 1 each from scarlatina, whooping-cough, diphtheria, simple-continued fever, and enteric fever, and 3 from diarrhoea. The 18 deaths in Limerick comprise 1 each from scarlatina, typhus, and diarrhoea; and the 5 deaths in Sligo comprise 1 from scarlatina and 1 from simple-continued fever.

In the Dublin Registration District the births registered during the week amounted to 196—101 boys and 95 girls—and the deaths to 160—75 males and 85 females.

The deaths represent an annual rate of mortality of 23·6 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 22·9 per 1,000.

Twenty-six deaths from zymotic diseases were registered, being 7 over the number for the preceding week, but 4 under the average for the twentieth week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 7 from whooping-cough, 1 from ill-defined fever, 6 from enteric fever, 4 from diarrhoea, 2 from erysipelas, &c.

The number of cases of scarlatina admitted to hospital during the week is 9, being a decline of 8 as compared with the admissions for the preceding week; 10 scarlatina patients were discharged, and 62 remained under treatment on Saturday last, being 1 under the number in hospital on Saturday, May 12.

During the week ended May 12, only 1 case of enteric fever and not one of typhus had been admitted to hospital; during this week 5 cases of the former and 9 of the latter disease were received. Fourteen cases of typhus and 15 of enteric fever remained under treatment in hospital on Saturday, May 19.

Thirty-three deaths from diseases of the respiratory system were registered, being 13 over the number for the preceding week, but 3 under the average for the twentieth week of the last ten years. They comprise 12 from bronchitis and 14 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.,
Long. 6° 15' W., for the Month of May, 1888.*

Mean Height of Barometer,	-	-	-	30.000 inches.
Maximal Height of Barometer (on 11th and 23rd, at 9 a.m.),	-	-	-	30.519 „
Minimal Height of Barometer (on 1st, at 8 a.m.),	-	-	-	28.990 „
Mean Dry-bulb Temperature,	-	-	-	52.4°.
Mean Wet-bulb Temperature,	-	-	-	48.2°.
Mean Dew-point Temperature,	-	-	-	44.1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.293 inch.
Mean Humidity,	-	-	-	74.0 per cent.
Highest Temperature in Shade (on 7th),	-	-	-	68.7°.
Lowest Temperature in Shade (on 4th),	-	-	-	36.9°.
Lowest Temperature on Grass (Radiation) (on 4th),	-	-	-	28.1°.
Mean Amount of Cloud,	-	-	-	43.6 per cent.
Rainfall (on 11 days),	-	-	-	.978 inch.
Greatest Daily Rainfall (on 29th),	-	-	-	.251 inch.
General Directions of Wind,	-	-	-	W., N.E., N.W.

Remarks.

Very stormy, rough, and unsettled both at the beginning and at the end, May, 1888, was, nevertheless, a bright, dry, pleasant month. The rainfall was scanty, and in an anticyclonic period lasting from the 20th to the 26th, the sky was for the most part cloudless. As in May, 1887, there was a preponderance of polar winds (N.W. to N.E. and E.). The gales of the 1st, 2nd, 3rd, 30th, and 31st were very severe for the season. Thunder was heard on the 2nd, and hail fell on that and the following day.

In Dublin the mean temperature (52.5°) was slightly above the average (51.9°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 52.4°. In the twenty-three years ending with 1887, May was coldest in 1869 (M. T. = 48.2°), in 1885 (M. T. = 48.7°), and in 1879 (the cold year) (M. T. = 48.8°). It was warmest in 1868 (the "warm year") (M. T. = 55.8°) and 1875 (M. T. = 54.9°). In 1886 the M. T. was 50.5°, and in 1887 it was 51.8°.

The mean height of the barometer was exactly 30.000 inches, or 0.004 inch above the average value for May—namely, 29.996 inches. The mercury rose to 30.519 inches at 9 a.m. of the 11th and 23rd, and fell to 28.990 inches at 8 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, as much as 1.529 inches—that is, a little more than one inch and a half. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m.

was 52.4° , or 7.2° above the value for April, 1888; that calculated by Kaemtz's formula—viz., $\text{min.} + (\text{max.} - \text{min.} \times .41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 51.2° , or 0.3° above the average mean temperature for May, calculated in the same way, in the twenty years, 1865–84, inclusive (50.9°). The arithmetical mean of the maximal and minimal readings was 52.5° , compared with a twenty-three years' average of 51.9° . On the 7th the thermometer in the screen rose to 68.7° —wind W.S.W.; on the 4th the temperature fell to 36.9° —wind W.N.W. The minimum on the grass was 28.1° on the latter date. The rainfall was only .978 of an inch, distributed over 11 days. The average rainfall for May in the twenty-three years, 1865–87, inclusive, was 2.072 inches, and the average number of rainy days was 15.5. The rainfall and the rainy days, therefore, were decidedly below the average. In 1886 the rainfall in May was very large—5.472 inches on 21 days; in 1869 also 5.414 inches fell on 19 days. On the other hand, in 1871, only .378 of an inch was measured on 9 days; in 1876 only .798 of an inch fell on 6 days; and in 1887 only .882 of an inch fell on 10 days.

There was a solar halo on the 15th. The atmosphere was foggy on the 10th, 11th, and early morning of the 27th. High winds were noted on 8 days, attaining the force of a gale on the 1st, 2nd, 3rd, 30th, and 31st. Hail occurred on the 2nd and 3rd. The only heavy falls of rain were on the 9th (.233 inch), in connection with an anticyclone, and on the 29th (.251 inch), in connection with a deep depression and gale.

During the week ending Saturday, the 5th, the weather was chiefly rough, cold, and showery—a series of deep depressions in the North-west and North causing fresh or strong gales at first from S., and afterwards from W. or N.W. Many years have passed since May was ushered in by such stormy weather as prevailed on the present occasion—the wind reaching the force of a gale on each of the first three days of the month. Hail fell in heavy showers on Wednesday and Thursday, the 2nd and 3rd, and thunder occurred at 1 p.m. of the former day. In Dublin the mean height of the barometer was 29.706 inches—the extremes being—highest, 30.246 inches, at 9 p.m. of Friday: lowest, 28.990 inches, at 8 a.m. of Tuesday. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 47.5° . On Saturday the thermometer in the screen rose to 57.9° , having fallen to 36.9° on the previous day, when a minimal reading of 28.1° was recorded on the grass. Rain fell in appreciable quantity on five days (including hail on two days), the total measurement being .746 inch, of which, however, .343 inch fell on Monday, April 30th, and .110 inch on Sunday, April 29th.

In the second week (from the 6th to the 12th inclusive) the weather was favourable, except on Wednesday, which was a dull, cold, and ultimately wet day. At the beginning of the period, moderate westerly

winds prevailed with a good deal of cloud and high temperature. On Tuesday evening the wind drew into N. and the thermometer gave way. On Wednesday the clouds came from N.W., while a cold easterly breeze caused a considerable rainfall ($\cdot 233$ inch in Dublin). Next morning the clouds dispersed, and the remainder of the week was fair and quiet—cool easterly sea breezes by day being followed by calms and low temperatures by night. In Dublin the mean height of the barometer was $30\cdot 350$ inches—the highest reading being $30\cdot 519$ inches at 9 a.m. of Friday; the lowest, $30\cdot 144$ inches, at 9 p.m. of Monday. The mean dry bulb temperature at 9 a.m. and 9 p.m. was $51\cdot 9^{\circ}$. On Monday the shade thermometer rose to $68\cdot 7^{\circ}$ —the maximum for the month—while it fell to $38\cdot 9^{\circ}$ on Friday. There were frosts on the grass on the last two mornings. The rainfall for the week was $\cdot 233$ inch, recorded on Wednesday, the 9th.

At the beginning of the third week (13th–19th inclusive) conditions were anticyclonic and the weather was fine and dry. On Monday, the 14th, the barometer gave way quickly and the wind backed to S.W. and S. from N.W., with showers and squalls and very unsteady temperature. On Friday, the 18th, the isobars ran nearly due N. and S. across Western Europe, and very warm weather was experienced except at the sea coast stations—the thermometer rose to 75° in the shade in London. On the previous day it had reached 82° at Berlin and Belfort, and 79° at Wiesbaden and Biarritz. In Dublin the mean dry bulb temperature, deduced from observations taken daily at 9 a.m. and 9 p.m., was $51\cdot 5^{\circ}$. The highest reading of the thermometer was $65\cdot 5^{\circ}$ on Saturday, the lowest was $39\cdot 2^{\circ}$ on Monday. The mean atmospherical pressure was $29\cdot 632$ inches. At 9 a.m. of Sunday the barometer was as high as $30\cdot 320$ inches; at 9 p.m. of Wednesday it fell to $29\cdot 182$ inches. Rain fell in appreciable amount on four days—the total precipitation being $\cdot 151$ inch, of which $\cdot 066$ inch was measured on Wednesday, the 16th.

Settled, brilliant weather characterised the week ending Saturday, the 26th, in Ireland, where conditions were for the most part anticyclonic. On Sunday an irregular atmospherical depression, which had caused severe thunderstorms in parts of Great Britain—especially in the S.W. of Scotland—on the previous day, was dispersing off the N. of Scotland, and a high pressure system was advancing northwards over the United Kingdom from France. This system subsequently took up a fixed position in the N. and N.W., and in consequence the wind became north-easterly. In Ireland it blew with little force, and a cloudless sky prevailed day after day. In Great Britain the wind was stronger, and clouds shut out the sun's rays, so that temperature was often low. In Dublin the mean height of the barometer was $30\cdot 333$ inches, pressure increasing from $30\cdot 034$ inches at 9 a.m. of Sunday to $30\cdot 519$ inches at 9 a.m. of Wednesday, and afterwards decreas-

ing to a minimum for the week of 29·984 inches at 9 p.m. of Saturday. The mean dry bulb temperature, deduced from observations taken daily at 9 a.m. and 9 p.m., was 57·1°, an advance of 5·6° upon the corresponding temperature of the previous week. The thermometer rose to 66·3° in the screen on Sunday, and fell to 45·3° on Saturday. No rain fell in Dublin during the period. At the Ordnance Survey Office, Phoenix Park, no less than 95·6 hours of bright sunshine were registered this week, or a daily average of 13·7 hours.

On Sunday, the 27th, the anticyclone in the N. and N.W. completely dispersed, and conditions became less settled. On Monday night a sharp frost took place in Scotland, the shade thermometer falling to 29° at Wick and to 30° at Nairn. Next day a large and deep impression came in over the N.W. of Ireland from the Atlantic, causing strong S. to W. gales and a heavy and general rainfall throughout the Kingdom. At Donaghadee 1·84 inches of rain fell in the 24 hours ending 8 a.m. of Wednesday, the 30th. In Dublin the last three days of the month were rough, cold, and unsettled.

During the month the thermometer in the screen did not fall below 36·9° (on the 4th), but on seven nights temperatures of 32° or less were recorded on the grass. The mean minimal temperature on the grass was 37·5°, compared with 34·6° in April, 28·7° in March, 29·4° in February, and 31·1° in January. In May, 1887, ground frosts were observed also on seven nights, and the mean minimal temperature on the grass was 37·9°.

The rainfall in Dublin during the five months ending May 31st has amounted to 9·068 inches on 69 days, compared with 6·489 inches on 62 days during the same period in 1887, and a twenty-three years' average of 10·560 inches, on 81·7 days.

At Greystones, Co. Wicklow, the rainfall in May, 1888, was 2·14 inches, distributed over only 9 days. Of this quantity, 1·03 inches fell on the 29th, ·84 inch on the 1st, and ·27 inch on the 9th. Since January 1, 10·73 inches of rain have fallen at Greystones, on, however, only 48 days.

CHLOROFORM FOR TAPEWORM.

DR. THOMPSON (*Montpellier Médical*, July, 1887) recommends the following prescription as a reliable vermifuge:—R. Chloroform, 4 grammes; simple syrup, 35 grammes—mix. Make in three equal doses, of which take the first at 7 a.m., the second at 9 a.m., and the third at 11 a.m. At midday the patient should take 35 grammes of castor oil. The expulsion of the tapeworm usually occurs within an hour and a half or two hours after taking the castor oil.

PERISCOPE.

CAPSICUM IN OPIUM POISONING.

DR. J. G. KIERNAN (*Med. Standard*, February, 1887) speaks of the value of capsicum in opium poisoning, and concludes his article with a record of four cases in which he had used the drug with signal advantage. In one of these cases atropin had been tried without benefit. He uses tinc. capsici. four drachms in enema, and dilutes it with coffee, as in the pure form the injection causes proctitis. The value of capsicum in this connection is confirmed by the authority of Hammond, of New York, and Shoemaker, of Philadelphia.

TRAUMATIC HYSTERIA.

In an interesting *brochure* entitled "Contribution à l'Étude de l'Hystérie Traumatique," Dr. E. H. M. Thyssen, Médecin de la Légation des Pays-Bas (à Paris), reports the case of a man, aged 21 years, who was brought to the Salpêtrière, on November 2, 1887, to be admitted under the care of M. Charcot. On April 20, in the same year, the patient was at work at a height of about 13 feet on a scaffolding, which suddenly fell, throwing him forward to a distance of some yards on a stone staircase. He fell on his back; his head, bent downwards outside the staircase, did not come into contact with it. He tried to get up, but only rolled over on himself. In about five minutes help arrived. On trying to stand upright his legs failed, and he sank down. He was carried to an apothecary's, where he was rubbed with arnica, in the course of which procedure (20 minutes after the accident) he lost consciousness. This state of things lasted half an hour without his showing either convulsive movements or anything remarkable. When he came to himself, he was carried home in a vehicle, and remained in bed for 24 hours. During this time he had vague scattered pains, chiefly in the back, loss of appetite, some feverishness, hæmatemesis and melæna. No paralytic symptoms were observed, as regards either the sphincters or the limbs. Three days after the accident an aura ushered in an epileptiform attack, which in turn was followed by various peritoneal symptoms—abdominal pains, bilious vomitings, tympanites, retention of urine. This state lasted for a month and a half, when the patient began to improve, so that in July he was able to resume his work to some extent. Over-exertion brought on an aura without loss of consciousness, and he fell on his seat without being able to get up again. He was brought to the Necker Hospital, where he had to remain in bed, suffering terribly from pains in the back and waist. The diagnosis

of Pott's disease was made, and he was put up in a silicated corset, and treated by rest and fortnightly applications of Corrigan's button. When admitted to the Salpêtrière, on November 2, the patient showed the following symptoms:—First, from the motor point of view—(a.) A paralysis of the right leg; (b.) A paresis of the right arm; (c.) Tremors in both legs; (d.) Exaggerated knee-reflex on the left side; (e.) Lessened dynamometric power on the right side. Secondly, from the sensory point of view—(a.) Sensibility abolished or lessened to touch, pricking, and temperature on the right side; (b.) An hysterical hyperæsthesia (rachi-algia; (c.) Pseudo-ovarian zones; (d.) A testicular painful point on the right side; (e.) An hyperæsthesia of the scrotal skin; (f.) A painful point at the level of the hip—hysterical coxalgia (sign of Brodie); (g.) Absence of the cutaneous reflexes of the right leg; (h.) Sight, smell, taste, and the pharynx are more or less affected. Thirdly, from the point of view of trophic disturbances—(a.) Muscular weakening and wasting on the right side; (b.) The patient sweats profusely.

Dr. Thyssen considers that the diagnosis lay between—(1) Pott's disease; (2) a fracture of the spine; (3) an affection of the brain, spinal cord, or nerves; and (4) hysteria. One by one he excludes the organic lesions, and comes to the conclusion that hysteria affords a solution of the problem. He thinks it useless to pass in detail the various symptoms of this disease, and holds that the monoplegia of the right leg shows such special characteristics as to suffice by itself to establish the diagnosis. These principal characteristics are four in number:—1. The way in which the patient drags the leg: he *brushes or sweeps the ground—paralyse flasque*. 2. The anæsthesia is distributed *en gigot* (leg-of-mutton-like). It is a psychical (cortical?) anæsthesia, in which sensibility is wanting alike in the muscles and in the articulations. 3. This anæsthesia does not vary: when electrical currents, even strongly applied, traverse this leg they pass unperceived, though the muscles contract. 4. The muscular atrophies observed by Charcot and Babinski in hysterical subjects are present in this case, but the reaction of degeneration is completely wanting. Dr. Thyssen reports a second case, and finally draws the following conclusions:—1. Hysteria is a disease of all countries. 2. It is a distinct disease; its diagnosis can be made by the observation alone of its proper symptoms. He maintains this view contrary to Oppenheim, who thinks that, in order to establish the diagnosis of "hysteria," it is indispensable to eliminate in the first instance everything which appertains to a disease other than hysteria.* 3. The constancy of the symptoms of hysteria, of which a glimpse was caught from the first observations which were published, becomes clearer every day, and Dr. Thyssen's two cases still further confirm his way of

* Ehe man sich zur Diagnose Hysteria versteht, soll man alle andere Krankheitsproccesse ausgeschlossen haben.—*Arch. für Psychiatrie*, xvi.

looking at it. 4. From the motor, sensory, and trophic points of view, hystero-traumatism shows itself as one of the most constant and most lasting manifestations of the nervous disease "hysteria." 5. As hysteria and hystero-traumatism may become complicated with other diseases, it will be possible to completely isolate their share in a given case, regard being had to the invariability and constancy of their primordial symptoms. Dr. Thyssen anticipates and refutes an objection to the use of the term "hysteria" in the following paragraph :—"Le mot, dit-on, est mauvais ; c'est bien possible, mais nous ne devons, dans les sciences positives, compter qu'avec les idées que le mot représente et non avec le sens intrinsèque du mot ; ne peut-on pas discuter avec des mots, du moment que ces mots représentent une idée." *

J. W. M.

BLEEDING IN SUNSTROKE.

At the Chambers-street branch of the New York Hospital, a patient suffering from sunstroke, who had a temperature of 108.8° , and had had violent convulsions for twelve hours, was recently bled to the extent of eighteen ounces, with the effect, apparently, of saving his life ; although twice afterward the temperature went up as high as 105° . A case very similar in character which was brought to the same hospital some time since, and in which bleeding was not resorted to, terminated fatally.—*Medical Progress*, No. 263.

NEEDLE IN THE HEART.

In making an autopsy on the cadaver of a man who had died of Landry's paralysis, on incising the heart a fragment of iron, 8 mm. in length, apparently a piece of a needle, was found embedded near the apex. It had lain there a long time, being partially oxidised.—*Med. Chronicle*, 1887.

MUSCULAR HYPERTONICITY IN PARALYSIS.

DR. HUGHES BENNETT, in opening a discussion on this subject at the Neurological Society of London, describes a morbid state which, although not uncommon, has hitherto received but little attention. A person begins to experience a feeling of weakness in one or both lower limbs ; this slowly increases, and may involve the upper extremities also. It is associated with increased irritability of the muscles to percussion, and with increased tendon reflex. Beyond this there is nothing. Sensibility is unimpaired ; there is no rigidity or spasm of the affected muscles, no trophic disorder ; the functions of bladder, rectum, and generative organs are normally performed ; the muscular sense is little, if at all, impaired ; the superficial reflexes are normal or slightly increased. Both sexes are equally affected, and the disease occurs in every condition of life. The

* "Doch ein Begriff muss bei dem Worte sein." (Faust).

disorder is very chronic; recovery often takes place; the condition after advancing for a time may remain stationary, or the patient may get gradually worse, although absolute paralysis rarely, if ever, results. Nothing is known of the pathological anatomy, and treatment seems to be without effect. Taking this condition as his text, Dr. Bennett discusses the entire subject of muscular hypertonicity and its relation to paralysis. For the arguments and conclusions of this discussion we must refer our readers to the paper itself.—*Brain*, Oct., 1887.

PAINFUL HÆMORRHOIDS.

THE following prescription is recommended by Dr. Thomas H. Kinnard (*Pacific Med. and Surg. Journal*) as an application for painful piles:—
R. Extract of garlic, one part; olive oil, two parts; mix intimately, and apply some of the mixture night and morning to the piles.

ANTIPIRYN IN SEA-SICKNESS.

M. EUGÈNE DUPUY finds antipyrin the best remedy for sea-sickness. He recommends three grammes to be taken daily for three days.—*Gazette Hebdom. de Méd. et de Chir.*, November 28, 1887.

DIABETES MELLITUS SUCCESSFULLY TREATED BY NITRO-GLYCERINE.

DR. R. A. KENNEDY (*Canada Medical Record*, January, 1888) reports a case of diabetes mellitus successfully treated by nitro-glycerine. Mrs. B., aged twenty years, who was passing 8·75 oz. sugar daily, was, on the 1st of March, 1887, put on one minim doses of nitro-glycerine, and on the 31st of the following July was convalescent, and allowed the ordinary dietary, all medication having been discontinued.

AMYL NITRITE IN AGUE.

SURGEON-GENERAL GUNNELL, of the U. S. Navy, advocates the use of amyl nitrite—a few drops by inhalation in the chill stage of the fever. By its use he thinks the chill and fever will be abridged, and the patient often hurried into the sweating stage in half a minute.—*Sacramento Medical Times*, April, 1887.

POISONING BY CASTOR-OIL BEAN.

DR. EDSON reports a case of poisoning by castor oil bean. In October, 1887, fifteen children, under six years of age, and a female nurse, twenty years of age, in Brooklyn, U.S.A., indulged in a repast of raw beans taken from a castor-oil plant growing in the yard of the Home for Destitute Children, with the result that severe vomiting and prostration, lasting for forty-eight hours, occurred. The peculiar fact is that in not one of the cases was there purging.—*Brooklyn Medical Journal*, February, 1888.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Oleum Iodi (Iodised Oil).

MESSRS. LORIMER & Co., of Britannia-row, Islington, London, N., have brought under our notice a new preparation, protected by Royal Letters Patent, entitled Iodised Oil (*Oleum Iodi*). It was introduced by the patentee in response to inquiries from some of the leading practitioners in Glasgow, and is prepared by the Blythswood Chemical Company, Limited, at Govan, Ayrshire. Iodised or iodine oil is a solution of pure iodine, combined with a vegetable oil and water in nearly equal parts. It contains ten grains of iodine in each fluid ounce. It is a perfectly bland, bright, straw-coloured solution, of uniform consistency, and free from deposit. When necessary, the strength can be increased by the addition of tincture of iodine, or diminished by the addition of water. The advantages of the iodine oil are that it does not stain the skin, nor when rubbed on does it irritate it. Unlike the ordinary preparations of iodine, it may be applied where the skin is most delicate. Its application is absolutely painless. The iodine, very soon after application of the oil, becomes rapidly absorbed, and we have indisputable evidence of this by its detection not only in the blood, but in the secretions of the urine, sweat, saliva, and milk. This absorbent action is continued so long as the oil is used. Iodine oil may be employed as a resolvent in chronic visceral and glandular enlargements, indurations, and thickening of membranes (as of the periosteum). It acts specially as a stimulant to the entire lymphatic system, and has been employed with great advantage for scrofulous maladies generally. As a counter-irritant and absorbent in chronic rheumatism of the joints and muscles it has proved of signal benefit. In chronic pleurisy and in incipient or protracted consumption, iodine oil may with advantage be applied to the outside of the chest to allay harassing cough, and to check secretion from the bronchial tubes or pulmonary cavities. As a topical remedy iodised oil has been found useful in many cutaneous diseases, especially eczema. It is a valuable application to chilblains (when not broken), relieving the intolerable itching, and producing no desquamation. In scrofulous ophthalmia, if painted daily over and round the eyelids, it greatly contributes to relieve the excessive intolerance of light. It is extremely useful where any effusion has taken place into synovial membranes or sheaths, as in house-maid's knee. In acute gout the application of the oil to the affected part is said to give unquestionable relief, and should be repeated daily. The oil may be applied with a camel's hair brush, or may be rubbed on the affected part with the hand.

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Geddes' Fluid Extract of Hemlock Bark.

(*ABIES CANADENSIS*.)

Boston, Mass., U.S.A.; March 22nd, 1886.

GENTLEMEN,

Geddes' Extract of Hemlock Bark is still winning laurels for you. I have recently effected cures by its application, as follows:—One case of bleeding piles of long standing; one case of Leucorrhœa, treated with other remedies for three years, and continued to grow worse; one case of bed sores, on an old lady who was obliged to lay on the sores continually—they were completely healed in less than one week; one case of a bad leg, which had discharged offensive matter for years, completely healed in twenty-seven days from the first application. Your discovery of the Extract of Hemlock is the crowning triumph of the nineteenth century; the cures it effects are not only marvellous but truly wonderful.

Very truly yours,

WALTER E. ESTABROOK, A.M., M.D.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 1, 1888.

PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*Separation of the Coracoid Epiphysis of the Scapula.**

By E. H. BENNETT, M.D., Univ. Dubl.; F.R.C.S.I.; Professor of Surgery in the University of Dublin; Surgeon to Sir P. Dun's Hospital.

I HAVE used this term, coracoid epiphysis of the scapula, for convenience, well knowing that the independent centre of the coracoid is essentially different in its homology from the ordinary epiphyses, and that on this ground objection may be taken to its employment. In the pathological sense this specimen is an epiphysary separation, and agrees in its details with the lesion as we see it in the long bones. The cartilage uniting the coracoid to the scapula has separated from the latter, carrying with it in one part a small scale of bone—in other words, the line of separation is on the proximal side of the epiphysary cartilage, and any further secondary fracture of bone is seated in the diaphysis, as constantly occurs in the similar injuries of the long bones.

My object in bringing forward the specimen is to record its existence, for I have not found any record of a similar case. The following is the category of epiphysary separations admitted by Malgaigne as having been proved by dissection to exist:—"The epiphysary separations which have been attested by dissection are—1st, of both extremities of the humerus; 2nd, of the inferior

* Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, Friday, June 1, 1888.

extremity of the radius; 3rd, of both extremities of the femur; 4th, of both extremities of the tibia. To this list we can add the epiphysis of the great trochanter, of the inferior extremity of the fibula and of the ulna. I have shown that the rarely-observed secondary centre of ossification of the astragalus may be detached, and I can now add to the list the detachment of the coracoid secondary centre.

M. Coulon, writing in 1861 specially on the lesions of childhood, quotes, without addition, the words of Malgaigne; and, as I have said, in no written record can I find any mention of the coracoid process being detached after the manner of epiphysary separations.

The intrinsic value of this observation is very small, but I give it for what it is worth:—

CASE.—J. C., a male, aged six, was admitted to Sir P. Dun's Hospital on 15th July, 1887, in a state of profound shock, pulseless but sensible. He had been knocked down by a tramcar, and was taken up from beneath its guard board. A large flap of skin, from about the mammary line in front to within an inch of the clavicle above was torn up from his chest wall on the right side; a second rent of the skin extended backwards beneath the axilla from the point of the anterior wound; the axilla was so torn open and the upper limb all but torn off; the axillary vessels were seen torn through, and most of the nerves. The right forearm was broken, and many of the ribs on the right side were broken. His condition precluded operation for some 48 hours, when gangrene of the whole limb had occurred. Amputation at the shoulder was then performed by my colleague, Dr. Ball, the only difficulty being the finding of sufficient covering for the stump. In face of all these difficulties the child did well until tetanus set in, and proved fatal on July 23rd.

At the autopsy the right ribs were found broken, from the 2nd to the 7th, completely, while the 8th and 9th were incompletely fractured. There was no injury of the lung or pleura. The coracoid process was found to be broken.

From the character of the wound, particularly that of the skin, it is clear the force which inflicted the injury of the axilla was directed from below and in front, upwards and backwards, and its action ceased a little below the clavicle, which was intact. The lesion of the coracoid confirms this view. It is detached at its base, the line of separation passing through the proximal side of the cartilage, and at the upper and back part taking off a scale of bone from the supra-spinous fossa of the scapula. By misadventure

the ligament of the scapular notch was cut away in making the early investigation of the injury, but the posterior margin of the notch bears incontestable proof of the quality of force that produced the lesion. A partial fracture of the scapular border behind the notch extends into the supra-spinous fossa for half an inch, and its anterior border has been sprung backwards, so that the thin layer of bone has overlapped the opposite side of the fracture and remains fixed in its displacement. This shows that the ligament of the notch attached in front to the base of the coracoid had all but torn off backwards with it a strip of bone from the superior border of the supra-spinous fossa.

As the base of the coracoid in its epiphysary condition forms a part of the glenoid cavity just at its summit and along the concave part of its upper and inner border, we find these parts detached and displaced with the coracoid; the upper and inner end of the cotyloid ligament is torn through, and with the base of the coracoid the attachment of the outer limb of the cotyloid ligament is displaced unbroken, and the tendon of the biceps along with it.

The section made by the amputation passed through the capsule below these points, and so left their relations as regards the fracture undisturbed. There is no lesion of the clavicle or any other part of the scapula, but it is of interest to note that the acromial epiphysis is joined to the spine by a diarthrodial joint.

This specimen is of particular interest, in so far as it completes the series of coracoid fractures in our collection, which contains already several specimens of the fracture associated with dislocation of the humerus, a specimen of fracture from muscular action, and fractures from direct injury in the adult—a list of injuries of this process probably exhaustive; in fact, we want only a gunshot fracture of the part to make our collection complete.

The fractures of the ribs in this case are of interest because of their occurrence at so early an age, but as I have already laid a similar case before the Academy, I need not delay to describe these specimens.

ART. VI.—*Pulmonary Artery with Two Valves.** By ARTHUR WYNNE FOOT, M.D., F.K.Q.C.P.; Physician to the Meath Hospital; Professor of Medicine, Royal College of Surgeons.

I WISH to lay before the Academy the heart of a man, aged fifty-nine, which presents the very rare anomaly of two sigmoid valves in the pulmonary artery. Inasmuch as the heart exhibited other pathological features it is not assumed or pretended that the deformity in question had anything to do with the man's death. He had long suffered from incompetence of the aortic valves, and from a great degree of calcification of the ascending portion of the arch of the aorta; the left ventricle was very much hypertrophied. The immediate cause of death was a sudden attack of diffuse bronchitis, to which he succumbed after a few days' illness, on the occasion of his admission for the third time to the Meath Hospital. On his two previous visits he had presented in a marked degree the physical signs of aortic regurgitation.

The pulmonary artery had been happily opened in the line of junction of the two valves which were of equal size, both of them much broader and deeper than usual, and of such dimensions that the pair were as competent to close the orifice of the artery as three of the usual size would have been. From the absence of hypertrophy of the right ventricle it would also appear that the want of the third valve had not given rise to regurgitation. The corpora Arantii were small, but the slight thickenings which, between the fingers, could be felt in their situations, were each placed mesially in the free edge of the valves; there was no trace of a ridge on the pulmonary side of the valve, nor of a raphe visible when the valve segments were held against the light, nor of a rudimentary septum at the bottom of the pouches. These points are of importance to attend to in reference to the question of congenital or acquired malformation.

The man from whom the heart was taken had enjoyed good health till about four years before his death. He entered the army at seventeen, and served in it for twenty-one years; he never had rheumatism, nor had he received any strain about the chest other than that incidental to the accoutrements in use when he joined the service.

By a strange coincidence the only other case of a similar forma-

* Read in the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, May 4, 1888.

tion which I can find recorded in Ireland was one which was met with by Graves, in the Meath Hospital, in the year 1841. It is mentioned in his "Clinical Lectures," Vol. II., p. 180, and an earlier account of it is to be found in the *Dublin Medical Journal*, Vol. XX., p. 409. It was met with in a man, aged sixty-six, who died with pneumonia, pericardial effusion, and endocarditis of the pulmonary valves—which proved to be but two in number. Speaking of his case, Graves observes "the present is, as far as I can ascertain, the only specimen in which this peculiarity has been observed." In 1851 Dr. Peacock collected statistics upon the malformations of the aortic and pulmonary valves. He found that among forty-one cases of *defect* in the number of the valves, in nine the malformation existed at the pulmonic orifice, and in thirty two at the aortic.

It has been suggested that the existence of two in place of three valves, in either the pulmonary artery or the aorta, is due to disease and not to congenital malformation, the disease being so situated as to separate from the wall of the artery the conterminous attachments of two valves, which then, when thrown into one, constitute a single deformed valve, the result of the union of the two segments. Lapse of time would tend to obliterate the traces of the initial disease.

I am led to believe that in the present case we have to do with a congenital formation, from the equality in size of the valves, the mesial position of the corpora Arantii, the absence of any ridge on the arterial side of the valve, or of any rudimentary frenum at the bottom of the valve pocket.

The research which this case led to enables me to affirm two propositions, viz. :—(1) That numerical irregularities in the semilunar valves are more often observed in the aorta than in the pulmonary artery; and (2) that defect in the number of valve segments is more rare than excess.

It should be observed that in this case there was no other malformation in the heart, for Dr. Peacock has pointed out (*Path. Soc. Trans.*, Lond., Vol. III., p. 294) that defect in the number of the pneumonic valves is generally attended with other serious malformations which interfere with the natural development of other parts of the heart, and consequently, from the tendency to early death, is usually found in young persons.

ART. VII.—*Penetrating Wound of the Abdomen.** By THOMAS DONNELLY, M.D., F.R.C.S.I.; Assistant-Physician to the Richmond, Whitworth, and Hardwicke Hospitals.

"WOUNDS that penetrate the cavity of the abdomen," says Erichsen, "are of especial interest on account of the frequency with which they are complicated with peritonitis, and with injury of the viscera. They may, for practical purposes, be divided into—1st, those that penetrate the peritoneal sac, without wounding or causing the protrusion of any of the contained organs; and, 2nd, those that are complicated with protrusion or wound of some of the viscera."

The case which I have the honour of bringing under the notice of the Royal Academy of Medicine falls under the latter head.

Protrusion of uninjured intestine, mesentery, or omentum, may take place through the wound in the abdominal wall. The protruded mass is always very large in comparison with the aperture from which it escapes, the sides of which, being overlaid by it, constrict it rather tightly, so as to form a distinct neck to the protrusion. If left unreduced the mass speedily loses its polish and bright colour, becoming dull and livid from congestion. It then inflames and soon becomes gangrenous from the pressure exercised upon it by the sides of the aperture through which it has passed.

In replacing the protruded parts, whether by aid of incision or not, care must be taken that they are fairly put back into the cavity of the abdomen, and not pushed up into the sheath of the rectus or into the subserous areolar tissue lying before the peritoneum, an accident that would be fatal by allowing constriction of the neck of the protrusion to continue unrelieved.

In accidents of this kind, and also in operations, I believe too much rough handling of exposed parts takes place, as a rule, thereby causing injury to delicate structures quite unaccustomed to ill-usage, which are by nature well protected against external violence.

In this case I attribute the remarkable recovery in a great measure to the extreme delicacy with which the bowel was treated, together with the protection afforded it by the hot, moist lint, which likewise maintained the normal temperature of the viscus.

* Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Wednesday, May 11, 1868.

The circumstances surrounding this case were the reverse of what would be desired by surgeons in these days of antisepticism. They were briefly these:—

A dancing party was in the height of its enjoyment shortly after midnight in a drawingroom, the windows pushed up as far as possible, to permit the entrance of air to the room, heated to excess by burning gas and a crowd of ladies and gentlemen dancing. The hero of what fortunately did not become a tragedy, although having partaken plentifully of good things during the evening, rushed across the room in pursuit of a plum thrown into the air by one of the guests, stumbled, and fell through an open window, the window-sill being only about a foot high, and was impaled on the iron railing beneath.

CASE.—Recovery from a Punctured Wound of the Abdomen, with Protrusion of the Intestines.

A few minutes before 1 a.m., on August 31st, 1886, I was called to attend A. M., a fine healthy boy, aged nine years, who had fallen a height of about ten feet from an open drawingroom window on to the railings outside the hall-door, one of the spikes of which penetrated his abdominal cavity. On his being removed from off the railings part of his intestines protruded through the wound.

The accident occurred about half an hour before I was summoned. When I arrived the boy complained of intense abdominal pain, and resisted even very gentle manipulation of the intestine so much that Surgeon O'Farrell, who was present, concurred with me in the advisability of administering chloroform before making an effort to effect reduction of the hernia. Whilst waiting for the chloroform to be procured and administered—about three quarters of an hour—I covered the protruded intestine with a large piece of lint squeezed out of hot water, to prevent its getting chilled and to protect it from dust. When the boy was fully anaesthetised I carefully examined the wound, which was less than an inch in diameter, situated about two inches above the middle of Poupart's ligament on the right side. Protruding therefrom was a piece of small intestine, with attached mesentery, about the size of a clenched fist. It being found impossible to reduce the bowel after a few minutes' delicate manipulation, I determined to enlarge the opening to facilitate reduction. The outer angle of the wound appeared to offer the greatest obstacle to reduction, hence I cut in an outward direction through the abdominal wall for about a quarter of an inch, but found, on again endeavouring to replace the bowel, that the only improvement effected was by enlarging the opening to show that the inguinal direction of the wound must have been downwards and inwards, toward the spine of the os pubis. Before pro-

ceeding further with the description, I should mention that the boy vomited a large quantity of cakes, sweetmeats, &c., which he had eaten during the evening. While the patient was retching, the protruded bowel became distended, and a tumour extending from the external abdominal ring on the right side to the cutaneous wound became evident.

Following the hint which this swelling gave, I raised the superficial structures at the internal inferior part of the wound on a director, taking every precaution to avoid wounding any branches of the superficial epigastric artery, and enlarged the opening about half an inch, then separated the deeper structures, including the peritoneum, with my fingers. After some time, with gentle manipulation, assisted by Surgeon Elliott, who had now arrived also, I succeeded in returning the bowel to the abdominal cavity. A small quantity of clear, peritoneal fluid escaped from the abdomen, but scarcely any bleeding occurred.

The intestine, when reduced, was swollen and congested, but had not lost its glistening appearance. Having satisfied myself that the intestine was really in the abdominal cavity, and not in a *cul-de-sac* outside the peritoneum, I put one suture in the centre of the opening through the deep structures, including the peritoneum, leaving one end of the silk thread hanging out of the wound at its most dependent part, and secured to the skin by a strip of strong, surgeon's rubber plaster. Four superficial sutures were then inserted, after which the wound was washed and dried. A compress of lint, soaked in tr. benzoini co. was applied, and retained in position by strips of plaster and a spica bandage—a broad roller bandage round the abdomen, securing all outside. Before recovering from the chloroform the boy was removed from the sofa in the drawing-room—on which he lay since the accident occurred—and placed in bed with a pillow under his knees to keep his thighs flexed on the abdomen. His pulse had by this time recovered tone, and as he was still in a quiet sleep I left him about 3 a.m., having ordered half a wineglassful of water occasionally if thirst was distressing, also

R	Liq. opii sed.	-	-	-	mi.
	Syrupi	-	-	-	ʒi.
	Aq.	-	-	-	ʒii. M. ft. haust.
	Mitte vi. tales.		Sumat i. quartis horis.		

August 31st, 9 45 a.m.—Temp., 100·4° F.; pulse, 120 per min.; tongue slightly furred and moist. The patient was very bright, and complained of thirst, but not of pain or other discomfort. Draughts to be continued, half a wineglassful of water occasionally, nothing else allowed to be given.

5 p.m.—Temp., 100·4° F.; pulse, 122 per min., full and strong. Patient complained of thirst, but no other discomfort; was very sensible and tranquil. During the day he voided a small quantity of dark muddy

urine. There was tenderness on pressure over the bladder and seat of injury; very slight tenderness on pressure at any other part of the abdomen.

10 p.m.—Temp., 100·4° F.; pulse, 120 per min.; tongue slightly furred, but moist. The patient complained of intense thirst and pain in abdomen; he was restless, with an anxious expression of face. There was marked tenderness over right inguinal canal, extending up to and around the wound. The draughts were continued every fourth hour. Half a wineglassful of water only was allowed occasionally.

September 1st, 9 30 a.m.—Temp., 100·2° F.; pulse, 114 per min. The patient had been restless during the night, his bowels moving twice in the intervals; the urine was normal in appearance. The boy was tranquil, did not complain of pain, and did not feel so tender on pressure as on the previous night. The wound was exposed, but there was no pus to be seen; it was then washed and dressed as before. Allowed half a wineglassful of milk occasionally. The draughts to be given if required.

4 30 p.m.—Temp., 100·2° F.; pulse slower; vomiting occurred once during the day, hence the milk was discontinued and water only given. Tenderness on pressure was less, no pain complained of by patient.

2nd, 9.45 a.m.—Temp. normal; pulse, 84 per min.; very slight tenderness and no pain complained of. The patient was bright and cheerful, and asked for some food. He had slept all night without having taken a draught. I removed the superficial sutures, leaving in the deep one, which was quite firm still, and placed strips of adhesive plaster across the wound to prevent any tendency to gaping. The edges had united almost completely by primary union. There was very slight sero-sanguineous discharge, but no pus. The wound was then dressed with dry lint, and a spica bandage applied.

5 p.m.—Temp., normal; pulse, 82 per min. The child was tranquil, free from pain, complaining only of hunger. His bowels were moved once naturally during the day. He was allowed half a teacupful of milk with a teaspoonful of lime-water every third hour.

3rd, 12 15 p.m.—Temp., normal; pulse, 82 per min. The child was bright, and complained only of hunger, was beginning to object strongly to the enforced fasting. The bowels acted naturally in the morning; urine normal; no medicine was administered; half a teacupful of milk was ordered to be given every second hour, and half a wineglassful of chicken jelly twice in the day.

4th.—Temp. and pulse normal. The child was cheerful. Only liquid food was given. During the following six days the wound was dressed with lint and oil. Liquid food only was given.

10th.—The deep suture on being gently pulled came away with merely a trace of pus. The wound was dressed as before.

12th.—The patient was very bright, and mending rapidly in health, but

complained of only being allowed slops, so that some beefsteak was added to his rations.

17th.—The wound had practically healed. The boy sat up with a broad belt, having a pad, three inches in diameter, placed over the cicatrix of rent in abdominal wall, protected by a piece of lint soaked in olive oil. The boy continued to improve, and as there was no tendency to hernia, he was allowed to move about on September 17th, with a broad belt around his abdomen.

This case I thought would interest the Academy because of—

1. Recovery, following exposure and constriction of the intestines of nearly two hours' duration.

2. The thoroughly aseptic course taken by the process of healing, although the accident happened and the bowel returned to the abdomen in an atmosphere impure with human exhalations and laden with dust; the slight localised peritonitis; no antiseptic precautions other than extreme cleanliness and care being used.

3. No tendency to ventral hernia one year and a half after the accident.

4. The minute dose of opium required to control the peristaltic action of the intestine and allay pain.

ART. VIII.—*Supra-pubic Lithotomy*.^{*} By F. ALCOCK NIXON, F.R.C.S.I.; Surgeon to Mercer's Hospital; Lecturer on Surgery, Ledwich School; Member of the Court of Examiners, Royal College of Surgeons.

ALTHOUGH the high operation for stone was performed more than three centuries ago, it has only very recently been introduced into practice in this country. Its value can be judged only by statistics, and if these are to be reliable, all cases, whether successful or unsuccessful, should be published.

The case which I have the honour to bring before the Academy, though unsuccessful, possesses, I think, some points of interest. Moreover, it was, I believe, the first upon which supra-pubic lithotomy was performed in Ireland.

CASE.—The patient, an old gentleman, eighty-one years of age, fifty-seven years ago suffered from "bleeding from the bladder and a stoppage of water, for which he consulted the late Surgeon Abraham Colles, of Stephen's-green, who sounded him for stone, but 'found nothing wrong.'"

^{*} Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, April 13, 1883.

The hæmorrhage recurred at intervals every five or six years for fifty years. During the last six years he had it constantly, accompanied by pain on exercise, and jolting on a car always made it worse. "Shooting" pains commenced within the latter period, though often he had not the slightest inconvenience whatever.

When I first saw him, in March, 1887, he was passing daily a very considerable quantity of blood and pus, mixed with ammoniacal urine. He was much weakened by this loss of blood and constant pain. His pulse was weak and intermittent, and on one occasion, when in the city transacting some business, he suffered from an alarming attack of cardiac syncope, so that it was necessary to bring him home in a cab. He suffered from similar attacks before and subsequently, but none were so severe, until the final one, which proved fatal.

I saw him daily for more than a month, during which time I frequently urged him to allow me to sound him, but fear of the pain prevented him. Seeing that he was becoming much weakened by the constant pain, sleeplessness, and loss of blood, I advised consultation, and at his request I called in Sir George Porter, but again he obstinately refused to allow an instrument to be introduced.

When at last the pain and sleeplessness were manifestly destroying life he consented, and the sound readily detected the presence of a large calculus. The urethra was extremely small and irritable, and after the introduction of the instrument there was considerable constitutional disturbance, rigors, and high temperature, &c., which symptoms, however, soon subsided.

After a few days it was determined to administer ether, so as to measure the stone, and to determine the best method for its removal. Sir George Porter introduced the lithotrite and seized the stone, which he found to be more than two inches in diameter, and as I held the lithotrite, with the calculus between its blades, I said I thought I could detect a second stone, below and to the right side, but of this I was unable to fully satisfy myself, having failed to get the customary characteristic "click." The patient again suffered from the same symptoms as when the instrument was first introduced, the rigors, however, being more severe.

On carefully considering all the symptoms, and after consultation with Sir G. Porter, I determined to lay open the bladder by the supra-pubic incision.

I performed the operation on the 3rd of May last. I was assisted by Sir George Porter, ether being administered by Dr. Ward. On the previous night the patient had a hip-bath, the pubes was shaved, and the skin over it carefully washed—first with carbolic soap and subsequently with ether. On the morning of the operation, the rectum having been emptied by an enema, an indiarubber bag was introduced into it, and

distended with about 10 oz. of water, well heated. The bladder, having been emptied, was thoroughly washed out and afterwards distended with about 8 oz. of a 8 per cent. boric solution, also well heated, and retained by a broad rubber band placed round the penis.

Standing on the right side, with my left hand placed transversely, so as to grasp and steady the fundus of the bladder, I made an incision in the median line $3\frac{1}{2}$ inches in length, terminating at the pubes. The subcutaneous fat and subjacent fascia having been cut through, the linea alba was exposed and divided; the recti muscles having been separated, the fascia transversalis was reached and carefully divided upon a director.

Very little fatty matter was present, so that the bladder was readily reached. A curved needle, carrying a double layer of carbolised silk, was passed through its muscular coats.

A scalpel, with its back directed upwards, was thrust quickly into the bladder, and an incision about $2\frac{1}{2}$ inches was made in it. As the contained fluid escaped and the viscus collapsed the peritoneum, containing a coil of the intestine, came into view, but was readily replaced with the left hand. A short lithotomy forceps was passed through the bladder, with which the larger stone, weighing 2 ozs. $30\frac{1}{2}$ grs., and composed of ammonio-magnesian and calcium phosphates, was removed.

On exploring the interior of the organ with my finger, I felt a smaller stone embedded in a sacculus, the aperture of which would hardly admit the point of my index finger. There was a good deal of delay and difficulty in introducing the blades of the forceps into this opening, but, finally, I succeeded in seizing and extracting the calculus, which weighed $159\frac{1}{2}$ grs., and was found to be of similar composition to that first removed.

I closed the bladder wound with a series of sutures composed of fine carbolised silk, and introduced through its walls as far as the mucous lining. I placed a drainage-tube in the wound and a catheter in the bladder. The structures from deep to superficial were separately sutured. The skin wound was dusted over with iodoform and covered with alem-broth wool.

The patient suffered from profound shock, from which, however, he quickly rallied. His temperature, which was 101° Fahr. on the morning of the operation, was, at 10 30, 100° , at which it remained until 2 30 a.m., and at 4 30 p.m. it was 99° . On the following morning it rose to 101° , and in the evening was 100.5° . On the third day it registered 102° Fahr., after which it became normal, and so continued until the end.

The urine which escaped through the catheter was at first bloody, but afterwards became quite clear and free from both pus and blood, containing only some ropy mucus, the result of the antecedent cystitis. Its reaction became acid. The inhalation of the ether caused a good deal of laryngeal and bronchial irritation, which, however, soon subsided. The

coughing caused thereby produced some pain and inconvenience in the wound.

The catheter acted well, except on the 3rd day, when it became obstructed by a blood-clot, and for a short time the urine escaped through the abdominal wound.

On Saturday, the 7th, the fifth day after the operation, I visited the patient, at about 4 o'clock in the afternoon. His temperature for the two previous days had been normal; he had slept well; was able to take food; stated that he was perfectly free from pain. Altogether his condition seemed as satisfactory as one could expect. Yet within an hour he died quite suddenly from failure of the heart.

After death I examined the wound in the bladder, which I found healed with the exception of about half an inch in the centre. The mucous lining showed evidences of catarrh, which was subsiding. There was not a trace of inflammation, either of the peritoneum or the cellular tissue of the pelvis. The great age of the patient and the weak condition of his heart were of course very much against a successful result; yet he bore the operation so well, and had so far recovered from the effects of it, that it is not easy to say how his death is to be attributed to it.

The case is interesting from the long duration of the hæmorrhage from the bladder (over fifty years), also from the difficulty in recognising the presence of the second stone, as well as in extracting it.

CHLORAL IN DIPHTHERIA.

THE *American Journal of Medical Sciences* for March, 1888, states that Dr. A. Mercier, of Besançon, has utilised the antiseptic action of chloral in the treatment of diphtheria. The dose is one half-teaspoonful to one teaspoonful and a half of the French syrup every half hour until the false membrane is dissolved or disappears, which generally happens about forty-eight hours after the treatment has been commenced. No drink or food should be given for some time after each dose of the chloral, so that the drug may remain in contact with the throat mucous membrane. This French preparation is a twenty per cent. solution of chloral in syrup, so that the dose is from six to eighteen grains every half hour. [We would remind our readers that this method is not new, for, in 1884, Vail & Co., N. Y., published a monograph by Dr. C. B. Galentin, entitled "Chloral in Diphtheria and Croup," in which the use of chloral, locally as a spray, and internally in frequently repeated doses, was strongly urged. Dr. Galentin based his views upon a use of the drug for six years, during which time he treated over five hundred cases with a mortality of less than two per cent.]—*Sacramento Medical Times*, 1888.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Sectional Anatomy of Congenital Cæcal Hernia. By E. H. BENNETT, M.D., Professor of Surgery in the University of Dublin; and D. J. CUNNINGHAM, M.D. (Edin. and Dubl.), Professor of Anatomy and Chirurgery in the University of Dublin. London: H. K. Lewis, Gower-street. 1888. Pp. 30.

IN this work advantage is taken of the now favourite method of investigating anatomical relations by horizontal section to elucidate the pathological conditions met with in hernia. This certainly has the advantage of presenting a new aspect in the examination of hernia, and adds considerably to the value of the ordinary method of dissection, which, although it permits the full and complete examination of the coats of the sac, does not allow of the relations of its contents being examined in the position in which they existed during life. The method now used has the advantage not alone of doing this, but also of demonstrating the peritoneal relations to the contents in a much more satisfactory manner than could otherwise be effected. The importance of this to the operating surgeon in the open method now usually employed for radical cure is self-evident, and the examination of a number of hernia cases by this method would be of the greatest importance, as the conditions of peritoneal relations in inguinal herniæ are frequently most puzzling to the surgeon.

The authors are to be congratulated on the particularly clear and lucid manner in which the plates are referred to throughout both parts of the work. While the researches of Professor Cunningham on the importance borne by the hypertrophied gubernacular band to the occurrence of congenital inguinal herniæ are worthy of observation, his theory that such herniæ are due to an excess of development of this band, and not to an arrest in development, as is usually stated, is most ingenious. On pages 14 and 15 slight printer's errors will be noticed, for "Plate III." should read "Plate II.," and "p. 8" should read "p. 16."

It is to be regretted that the artist's work was not properly supervised by the authors before being finally transmitted, as then they and we should not have had to regret the omission of the gubernacular band from Plate I., Figs. 1 & 2. The importance of the relation of the displaced viscera to the iliac arteries, in view of the usual operative procedures on those vessels, is very properly and fully noticed, while we have another added to the many causes already given for the irreducibility of herniæ.

On page 30 Professor Bennett gives us an exact rule as to the direction the knife should take in the ordinary operation of lateral lithotomy.

The Preface informs us that the chief value of the work is in the plates, and certainly we must agree that they are in every particular above criticism, with the one exception already stated.

Emanating, as the work does, from the great School of Physic of the University of Dublin, it is a matter for regret that the blemish of a mis-spelling of the word "*cæcal*" disfigures nearly every page. As no one would or could attribute such an error to mere carelessness on the part of the erudite authors, we communicated with them and ascertained that they deliberately used the wrong spelling on the ground that many excellent authorities had adopted it. "Amongst English authors," they inform us, "Quain and Owen employ the 'æ,' but Sir Wm. Turner always uses the 'œ,' and in all the books Dr. Cunningham has published he has followed his lead. In Germany it is the *universal* custom to employ the 'œ' (*vide* Henle, Gegenbaur, Aeby, and a host of others). H. Meyer spells the word '*Cœcum*.' In comparative as well as in human anatomy the same spelling is adopted (*vide* Wiedersheim)."

This is, of course, all very well; but *our* authorities as to the spelling of the word are Cicero, Livy, Tacitus, Vergil, Horace, Ovid, and "a host of others," including the physician, Celsus, and by their orthography we are prepared to stand or fall, notwithstanding the Teutonic host that once more in vain has had the hardihood to defy the Roman eagles and the "Latin Name."

RECENT WORKS ON DISEASES OF THE SKIN.

1. *A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners.* Second Edition, thoroughly revised and enlarged. By JAMES NEVINS HYDE, A.M., M.D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago; Dermatologist to the Michael Reese Hospital, Chicago; and one of the Physicians for Diseases of the Skin to the Presbyterian Hospital, Chicago. London: J. & A. Churchill. 1888. 8vo. Pp. 676.
2. *Lectures on the Treatment of the Common Diseases of the Skin.* By ROBERT M. SIMON, M.D. Birmingham: Cornish Brothers. 1888. Pp. 110.
3. *A Treatise on Diseases of the Skin.* By T. M'CALL ANDERSON, M.D.; Professor of Clinical Medicine in the University of Glasgow. London: C. Griffin & Co. 1887. Pp. 639.

1. It is always a pleasant task to review the second edition of a work which has already received a favourable notice at our hands, and has besides proved a literary success. In the number of this Journal for April, 1884 (Vol. LXXVII., No. 148, Third Series), we described Dr. Hyde's Treatise as "a fair and skilful exposition of modern dermatology," and as "a work deserving of attention from dermatologists." This opinion we see no reason to change after a glance through the pages of the new edition, which contains a number of new woodcuts and two coloured plates—one, a portrait of nævus lipomatodes, forming the frontispiece to the work; the other, a portrait of a curious case of xanthoma of the hands, elbows, and knees, from a photograph of one of the author's patients. The book has been increased in size from 572 to 676 pages, chiefly through the introduction of original teaching, based on "personal observation of more than ten thousand cases of cutaneous diseases in both public and private practice."

Perhaps the most important change in the present edition is the employment of the classification and nomenclature of diseases of the skin adopted by the American Dermatological Association on August 29, 1878, and revised by the same body on August 28, 1884. It may briefly be described as a modification of Hebra's classification. According to it, skin diseases may be grouped in the following eight classes, namely—(1.) Disorders of the Glands—the sweat glands and the sebaceous glands; (2.) Inflammations;

(3.) Hæmorrhages—or, as the author, of course, prefers to spell the word—"Hemorrhages;" (4.) Hypertrophies of (a.) pigment, (b.) epidermal and papillary layers, (c.) connective tissue; (5.) Atrophies of (a.) pigment, (b.) hair, (c.) nail, (d.) cutis; (6.) New Growths of (a.) connective tissue, (b.) muscular tissue, (c.) vessels, (d.) the skin in general; (7.) Neuroses—namely, hyperæsthesia (subdivided into pruritus and dermatalgia) and anæsthesia; and (8.) Parasitic Affections, either vegetable or animal.

Dr. Hyde's etymology is sometimes a little inaccurate. For example, it is not correct to derive "purpura" from the Greek *πορφύρεος*, or "lentigo" from "*lens*, a freckle." "Purpura" is a classical Latin word, and the corresponding Greek noun is *πορφύρα*. "Lens" means "a lentil," but "lentigo" is repeatedly employed by Pliny to signify "freckles." He has the phrases "*lentiginem habere*," "*lentigines e facie tollere*," and many similar ones. Dr. Hyde may be congratulated on his correct spelling of the word "fibre."

We have again to express our hearty approbation of the author's treatment of skin diseases, which is at once scientific and based upon common-sense principles.

2. DR. SIMON's lectures were delivered as a post-graduate course at the Birmingham Medical Institute. They are not meant to be a complete account of the diseases dealt with, but merely an attempt to explain shortly and clearly the best lines of treatment for the various forms of the diseases and the scientific basis on which the treatment is founded.

Pruritus, eczema, psoriasis, scabies, acne, and ringworm are in turn discussed. Dr. Simon's little book will be found of great assistance in dealing with these common but troublesome complaints.

3. DR. M'CALL ANDERSON has made another addition to the long roll of text-books upon dermatology. But, while most of these are written by exclusive specialists, the volume before us has the merit of giving the experience of a hospital physician and clinical teacher of medicine who has had large opportunities of studying diseases of the skin. That he has long since made good use of his opportunities he has proved by the publication of his excellent monographs on psoriasis, eczema, and the parasitic affections of the skin. We now have these embodied in a work of wider scope,

which conveys the results of his matured experience. It can be recommended as a reliable and carefully-written text-book, and practitioners will value it especially for the full and explicit directions as to treatment. Indeed, "treatment" is, perhaps, the strong feature of Dr. Anderson's teaching, and his recommendations impress one as being judicious and sensible.

Numerous tabular statements are drawn up to assist in differential diagnosis, and a good many illustrations are introduced, including a coloured plate representing a variety of psoriasis, termed *Psoriasis rupioides* by the author.

Handbook of Geographical and Historical Pathology. By Dr. A. HIRSCH; Professor of Medicine in the University of Berlin. Vol. III., *Diseases of Organs and Parts*. Translated from the second German edition by CHARLES CREIGHTON, M.D. London: The New Sydenham Society. 1886. 8vo. Pp. 780.

THE members of the New Sydenham Society, and the medical world at large, may be congratulated upon now having the complete work of Professor Hirsch introduced to them under the careful handling of Dr. Creighton, who is responsible for the translation and for the preparation of the index.

Vol. I. dealt with acute infective diseases; Vol. II. with chronic infective, toxic, parasitic, septic, and constitutional diseases. Vol. III. discusses the "Diseases of Organs and Parts"—viz., respiratory apparatus, digestive and circulatory organs, genito-urinary organs, nervous system, diseases of the skin and of the organs of locomotion.

It is unnecessary to say anything in praise of a work which not only represents a colossal amount of patient labour on the part of its author, but also occupies a unique position in medical literature, and has had an important influence upon the course of ætiological inquiry, infusing it with a more scientific character than it formerly possessed.

Many curious facts and much interesting and suggestive information are contained in this great work. Let us take, for example, a few sentences.

Thus we learn that "Chronic diseases of the skin are among the principal localised maladies of the body that occur in great numbers and in widest diffusion in all parts of the world" (p. 652).

"Psoriasis is one of the most universal of skin diseases, being

found in every climate and zone, and among all races. It would appear to be more than ordinarily common in equatorial and sub-tropical latitudes, and most of all among the *coloured races*" (p. 63).

Epithelioma is unusually frequent, or even endemic, in some parts of India—*e.g.*, the south of India, and in the Vale of Cashmere.

"During the winter, owing to their inadequate clothing, the people of the Vale of Cashmere—men, women, and children—wear under their loose garments a 'kángri,' or charcoal brazier, about four inches in diameter, made of clay and covered with wicker, which contains burning coals or wood charcoal. It comes often into contact with the skin of the belly, especially in the sitting or squatting posture, when the wearer of the brazier rests it between the thigh and abdomen, and blows upon the glowing embers from time to time through a slit in his clothing. That practice is the explanation of the excessive frequency of burns, especially on the belly, of which the marks are found in almost every inhabitant of the country; and it is these old burns that are the starting points of the epitheliomatous disease" (p. 685).

Diseases of Man: Data of their Nomenclature, Classification, and Genesis. By JOHN W. S. GOULEY, M.D.; Surgeon to Bellevue Hospital. New York: J. H. Vail & Co. London: H. K. Lewis. 1888. 12mo. Pp. 408.

WHEN the time comes for an attempt at a scientific classification of diseases, and a nomenclature so expressive that the very name of a morbid condition will tell us all about it, this book will be useful. The time is not yet. The London College of Physicians has tried its hand, without signal success. For the present we must be content to postpone classification and to improve nomenclature. In the latter direction progress is even now possible, if we do not try to run too fast. Nominalism, which Prof. Max Müller is making strenuous efforts to revive, is dangerous in Medicine. Even now some of us are apt to think that when we have named our disease the battle with it is half won; and this evil will be intensified when our nomenclature has been brought to such perfection that sound or sight of certain syllables is supposed at once to suggest the essential nature of a disease, its ætiology, and its treatment. In the following sentence Dr. Gouley indicates a field in which less ambitious work than he himself attempts may be

done. "At present," he says, "a very considerable part of the nomenclature of medicine consists of such a great number of inappropriate, incorrectly-formed, and misleading terms, that often it is not easy for investigators even of the same nation, writing in the same tongue, to understand each other." Of the truth of this remark there can be no doubt, and the remedy is almost equally obvious, though not, we fear, likely to be applied. Should the Medical Council ever become a working instead of a talking body, and think of producing, in compensation for its enormous costliness, something more than a Register and a Pharmacopœia, it will delegate to a standing committee the revisal and progressive improvement of nosological nomenclature. Such a committee, with one or more members at each capital, would work by correspondence, and lay annual recommendations before the Council, which—and not the London College of Physicians—is the representative of the profession. The International Congresses afford ample opportunities for comparison and adjustment of our "insular" names to those in use abroad.

The value of Dr. Gouley's book—and it is valuable—consists rather in its historical than in its original sections. We confess we read through the first of the five divisions of his work in a state resembling nightmare. Five-syllabled words are child's-play to this hardy nomenclator. "Hyperleucontaemia," "hypererythrocythaemia," "haemodiapedisis"—these and the like he handles with the fearlessness of familiarity. When we saw that "ausetic affections may be echmatic, as in certain types of enlargement of the prostrate," we "read no more that day." There is reason to fear that familiarity with Greek has bred, either in the author or in his printer (or in both), contempt. Accents are lamentably dislocated; breathings are either ignored or (as in the *Corrigenda*!) replaced by acute accents; and the elementary rules for the formation of English words from Greek are disregarded. In Section II., which deals with Human Nosography, we have a valuable summary of the work of the older classifiers—Sauvages, Cullen, Récamier, Parr, Good, Aitken, and the London College of Physicians. Dr. Young's hundred "Aphorisms relating to Classification, taken chiefly from the *Philosophia Botanica* of Linnæus," are given. Section III. is bibliographical, being a "chronological list of the works on nosography that have appeared from the time of Felix Platerus to the present."

The fourth section discusses the need, the basis, and the method

of classification, and the character of the nomenclature which should be adopted. As regards the latter, we may hope that, some day, the language of medicine may come to be "euphonious, simple, expressive, and accurate; but we doubt if nomenclature will ever attain such perfection as "to mirror the medical experience, wisdom, and genius of the past as well as of the present." We are glad to see that our author accepts Linnæus' forty-first aphorism—"Generic names of hybrid origin, for instance partly Greek and partly Latin, are to be rejected." Names, he lays down, "as a general rule, should be Latin or Latinised Greek, or of Greek or Latin derivation, but should not be compounded of Latin and Greek." Some of our modern name-inventors delight to produce (or perhaps produce unknowingly) these verbal incongruities. In an Address delivered lately by one of our own celebrities we observed two of these monsters—"monocrural" and "epidural"! *Et tu, Brute!* With Dr. Gouley's condemnation of another growing nuisance we cordially concur:—

"The names of men applied to diseases are extremely objectionable, convey no idea of the nature of these diseases, and even fail to flatter vanity. It happens sometimes that a disease bears the names of two persons whose description thereof is the same. May it not also happen that one and the same disease is very differently described by two or even three persons, each giving his name to the disease, so that two or three diseases may be enumerated where one only exists? The resulting confusion and perplexity would, in such a case, be most discouraging to earnest students. The fashion of giving men's names to diseases has continued through so long a series of years that it has grown into a confirmed and mischievous habit. . . . The evil is already an offensive blot upon the nomenclature of medicine, and threatens to mar the best pages of medical literature. Will it not be a most agreeable relief to the senses of the heedful reader when authors shall have banished from their treatises such terms as Addison's disease, Basedow's disease, Bright's disease, Charcot's disease, Duchenne's disease, Dupuytren's contraction, Graves' disease, Hodgkins' disease, Ménière's disease, Potts' disease, and very many more of kindred names which express no notion of the nature of the affections bearing such pseudonyms?"

The concluding section includes a valuable summary of what is at present known about ptomaines,* leucomaines, bacteria, and neo-

* This word, we are told, is derived "from *πρῶμα*, cadaver, and *ἐν*, in, *ἐν*, within, opposed to *ἐκ*, without;" and Dr. A. M. Brown's definition of the word, which makes everything so clear, is quoted—"the cyclical nucleus of a proteid molecule that has undergone complete destruction in the process of putrefaction."

plasmas. This part of the work will be found most useful. A synopsis of Cohn's classification of bacteria is given, and a *résumé* of the various attempts which have been made at the classification of tumours. An excellent index is supplied.

An Index of Symptoms as an Aid to Diagnosis. By RALPH WINNINGTON LEFTWICH, M.D. London: Smith, Elder & Co. 1888. Pp. 205.

THIS is an attempt to group under the heading of various symptoms the diseases in which the symptoms occur. By this arrangement the medical man is meant first to observe what symptoms are present, then to look out in what disease each symptom occurs, and finally to consider which disease suits the grouping of symptoms present in the case. The diagnosis is then to be confirmed by consulting "Quain's Dictionary" or "Tanner's Index." Either of these "should, however, be referred to only to confirm a diagnosis carefully made from a coincidence of at least five symptoms."

It is hard to see any use for such a book. It only furnishes another example of the misapplied ingenuity of authors in devising subjects to write upon.

Some Observations on Headaches in Children, and their Relation to Mental Training. By WILLIAM HENRY DAY, M.B., M.R.C.P.L.; Physician to the Samaritan Hospital for Women and Children. London: J. & A. Churchill. 1887. Pp. 32.

THIS is a paper read in the Section of Diseases of Children at the International Medical Congress at Washington in September, 1887. It contains almost everything that is to be said on the vexed question of over-pressure in elementary schools and its results, steering fairly enough between the extremes of exaggeration on either side. We cannot, of course, escape altogether without some of the inevitable cant about "cramming," which, with a certain class of writers and speakers on educational subjects, has come to be synonymous with skilled assistance in preparing for an examination. "Mere cramming for a particular examination can never favour intellectual progress; it does not cultivate the reasoning and reflective powers; it is simply getting together a certain number of figures and facts which are not long remembered, and serve no useful purpose beyond the hour." There is no

reason in the nature of things why examiners should require only an exercise of memory of useless facts and figures, or why teachers should, in preparing pupils for examination, wilfully abstain from exercising the reasoning and reflecting powers as well as the recollective. This, however, is only a side-issue. It is unquestionable that, in other countries as well as in England, there are remediable defects, as well as inevitable drawbacks, in the modern attempts to universalise education. As to the former, they will best be remedied by teaching the teachers, rather than by continual inspection of the taught by a medical board, as Dr. Day suggests. For the rest, if the masses are to be educated by the State, the unquestionable benefit to the majority must be obtained at the cost of detriment to a weakly minority. We can strive to minimise this minority by precautions and improvements, but we shall never get rid of it, or of objections built upon its existence. On the large scale, in human affairs, no good can be done without attendant ill. We must be content when the good enormously preponderates, and the residual evils are insignificant and unavoidable.

An Introduction to the Study of the British Pharmacopœia. By RAWDON MACNAMARA, Professor of Materia Medica, R.C.S.I.; Senior Surgeon to the Westmoreland (Lock) Government Hospital; Surgeon to the Meath Hospital, &c. London: H. K. Lewis. 1888. 32mo. Pp. 121.

Of this capital and well-written booklet it may truly be said that "the best goods are often packed in the smallest parcels"—it, indeed, illustrates the phrase, "*Multum in parvo*."

In the short Preface, the author states that the book contains the substance of the "Prolegomena" to his course of lectures on Materia Medica, and he modestly speaks of it as intended for "beginners." We venture to say that many others than beginners will derive much knowledge from a careful study of Mr. Macnamara's little work.

The subjects treated of are the articles included in the British Pharmacopœia; its chemical and pharmaceutical preparations, and their volumetric and other tests; the modes of administering medicines, and the circumstances which influence their action; and, lastly, a brief therapeutic classification of the articles contained in the Pharmacopœia.

The slips and printers' errors are very few. We have noticed

two or three. For example, on page 28 we read—"On treating the opium with chloride of calcium a double decomposition ensues, meconate of *lead* is caught, and hydrochlorate of morphina passes through." Of course, this should read "meconate of calcium." Again, on page 19, "saponofiable" should be "saponifiable"—a correction which Mr. Macnamara, as a classical scholar of no mean parts, will appreciate. On page 93 we find the words "a *bolus* or *linctus*," as if the two were synonyms for one and the same thing. It should be "a *bolus* or a *linctus*"—the *bolus* being a large and comparatively solid pilular mass (*βῶλος*); the *linctus* a comparatively moist and soft mass, which can be licked off a spoon (*linctus*, a licking). On the same page the author recognises the female element in the profession in even too decided a manner when he speaks of a prescriber as "he or she."

In conclusion, we have the pleasant duty of congratulating Mr. Macnamara on the excellency of his modest literary effort, and of recommending it to the student, of whom the author may say:—"Quoi dono lepidum novum libellum? . . . Tibi . . . Quare habe tibi, quidquid hoc libelli est, qualecumque."

The Transactions of the Medico-Chirurgical Society of Edinburgh.
Vol. VI. New Series. Edinburgh: Oliver & Boyd. 1888.
Pp. 325.

WE welcome this new volume, which is somewhat behind time. It records the Society's work during the session 1886-87. It contains—besides notes of 28 cases, 53 pathological specimens, and 24 "miscellaneous objects" exhibited at meetings—19 original papers, to which are appended (regardless of expense), with great enhancement of their value, reports of the discussions which followed them. Medicine supplied 13 of these communications, "chirurgery" only 5, and physiology 1. We need notice especially only a few of these. Dr. Church's case of poisoning by corrosive sublimate is noteworthy for the remarkable, though not unprecedented, fact, that no trace of mercury could be detected in viscera or tissues. The patient was $5\frac{1}{4}$ years of age, the dose over 10 grains of the poison, dissolved in glycerine, administered by mistake for castor-oil. Death occurred in 22 hours. Reinsch's test was applied to mucus from the nasal cavity, contents of stomach and of duodenum, serum from the pleura, ejecta from the bowels six hours before death, a portion of the liver, and one kidney. No

mercury was deposited on the copper ; and other tests were applied with like negative result. Mr. Skene Keith gives detailed records of 23 cases of "removal of the uterine appendages for disease." It is to be regretted that this gentleman could not make a useful addition to our gynæcological knowledge without kicking out at certain brethren of his own craft. We do not know who the "abdominal surgeon" is who is credited with the aphorism that "it is as safe to open the abdomen as to open the pocket;" but we do know that Mr. Keith's *hête noire* has repeatedly denied having ever advised "to make a diagnosis after the abdomen has been opened." In a paper on empyema by Dr. William Russell (followed by a very interesting discussion), a puzzling question is propounded incidentally in connection with one of his cases:—"How came the empyema to be primarily fœtid, seeing there was no evidence of pulmonary gangrene or of communication with the outer world?" All similar cases observed have been, like this one, on the left side ; and the explanation is suggested that the contamination passes from the large intestine, the transit being assisted by concomitant inflammation of the diaphragm. This scarcely satisfies. Two special meetings were devoted to a discussion on scarlet fever, on which a committee had been appointed to report. The discussion will be read with interest, although it is impossible not to share in the President's (Prof. Grainger Stewart) disappointment that "so little of importance either on the scientific or on the practical side of the question" had been elicited.

The Construction and Maintenance of School Infirmaries and Sanatoria. Prepared by the Medical Officers of Schools Association. London: J. & A. Churchill. 1888. 8vo. Pp. 46.

THIS is an excellent shilling's worth, which should be in the hands of the authorities of every boarding-school in the United Kingdom. The book owes its origin to a request, preferred by many members of the medical and scholastic professions, for definite recommendations in respect to the construction and maintenance of those portions of school buildings which are commonly set apart for the treatment of the sick and injured.

To this request the Medical Officers of Schools Association—a body organised in 1884—have responded, encouraged by the success, gratifying as it is undoubted, which has attended the issue of a "Code of Rules for the Prevention of Infectious and Con-

tagious Diseases in Schools." This code was really a series of resolutions passed by the Association on January 7, 1885, and its popularity was so great that a second edition was called for within a year.

The work consists of two sections. The first treats of the "Infirmarium," which is defined as "a building intended for the reception and treatment of cases of non-infectious illness, and of accident, only." The second section similarly deals with the "Sanatorium," which is "a building intended for the reception and treatment of cases of infectious illness *only*." A table of contents and a very full index are appended; but the chief feature of the book is a series of thirteen plates giving sketch plans, after the best architectural and medical authorities, for school infirmaries and sanatoria.

The Association adopt the word "sanatorium" with admitted diffidence, as a euphemism for "Infectious Hospital," "Fever Wards," or "Fever Block." To our mind, there is not the least objection to use the term "Epidemic Wards," or simply "Hospital," to express a separate building set apart for the reception of infectious cases. With this passing criticism we warmly commend the book to the notice of our readers.

Gout and its Relations to Diseases of the Liver and Kidneys. By ROBSON ROOSE, M.D., F.C.S. Fifth Edition. London: H. K. Lewis. 1888. Pp. 175.

THE present edition is, with a few additions, a reprint of the fourth edition, which was noticed in our February issue. This rapid succession of editions is a strong tribute to the value of Dr. Roose's work.

Healthy Homes. A Lecture by HENRY CORBY, B.A., M.D., M.Ch. Cork: Guy & Co. 1888. Pp. 46.

THIS lecture was delivered to the Young Men's Society in Cork. It deals with the popular aspects of ventilation, water supply, and sewage removal, and contains statistics which will make its local circulation useful.

PART III.

HALF-YEARLY REPORTS.

REPORT ON OPHTHALMIC SURGERY.

By ARTHUR H. BENSON, M.A., Univ. Dub.; F.R.C.S.I.; Ophthalmic and Aural Surgeon to City of Dublin Hospital; Assistant Surgeon to St. Mark's Ophthalmic Hospital.

DURING the past year no very remarkable advances have been made in ophthalmic surgery, though in many directions much valuable work has been done. Many of the disputed points in ocular histology, pathology, anatomy, and therapeutics, have been carefully investigated and elucidated to a considerable degree. The year, therefore, though it cannot be regarded as one of very rapid progress, must be held to have been one of steady advance all along the line.

ANATOMY.

The Iris and Suspensory Apparatus of the Lens have been especially investigated.

Berger (*Contributions to the Anatomy of the Eye in its Normal and Pathological State*, Wiesbaden, 1887) has worked at the normal anatomy of the posterior chamber and the suspensory apparatus of the lens, and summarises his results as follows:—
1. The posterior chamber is divided into a space free from fibres of the zonula (præzonular), a second containing them (zonular), and a third lying behind the zonula (postzonular). 2. The præzonular is from 0·2 to 0·4 mm. deeper in the ciliary depressions than in the ciliary elevations. 3. From the zonular portion blind offsets extend into the depressions between the ciliary processes, and reach 1·0 to 1·5 mm. further back. 4. Most of the fibres of the zonula end in the anterior or posterior capsule of the lens; some, however, in the equatorial portion of the latter. The most anterior and the most posterior fibres of this lenticular band are most numerous, so that the latter can be filled with a viscid mass (albumen) (Hanno-

ver's canal). Injected air, or a solution of aniline, passes through the lenticular band into the anterior chamber. 5. The postzonular portion of the posterior chamber is of a capillary nature. Its anterior boundary lies 1 mm. inward from the equator of the lens, its posterior one 2 mm. from the ora serrata. Its anterior wall is formed by the fibres of the zonula or the posterior ones of the lenticular band respectively; its posterior wall partly by thickened vitreous tissue, partly by fibres of connective tissue (lig. hyaloidea capsulare). Very delicate, reticulated fibres pass through the postzonular portion; it rarely contains rigid fibres of the zonula. 6. A postzonular (Petit's) canal is formed by detachment of the vitreous produced by an exudation (eyclitis, staphyloma bulbi, glaucoma), or it results from changes after death, or it can be produced by injection. Numerous "rigid" zonular fibres are visible in Petit's canal only in eyes in which putrefaction has begun, or they are the result of an imperfect injection. 7. The posterior portion can be injected with a viscid mass like albumen, or with air, but not with a solution of aniline. When albumen is used, however, it also enters the lenticular bands. The belief is wrong that by injection of the zonular portion of the chamber a "canal godronné" can be produced, the anterior wall of which is formed by the lamina vitrea of the pars ciliaris retinae. 8. The outer layer of the vitreous is united in form of a circle with the posterior capsule of the lens, forming a postlenticular capillary space.

PUPILS.

Iwanow has investigated the question of the inequality of the pupils in healthy persons. His measurements were of 134 healthy young military recruits, and he found an equal width of the pupils in only 12 of them. The right pupil was larger in 49, the left in 73. The face was asymmetrical in 131, the left being larger in 99, the right in 32. The larger pupil frequently belonged to the smaller side of the face, while the latter usually seems to belong to the larger side of the body. An unequal width of the pupil does not, therefore, always have a pathological significance.

The "Pupil-symptoms met with after Injuries to the Head, &c.," have been treated of by J. Hutchinson, Junior (*Ophth. Rev.*, Vol. VI.). The chief points noted in this paper are—1. In most cases of concussion, for a variable time, depending on the severity of the injury, the state of the pupils resembles that met with in ordinary anæsthesia produced by ether, chloroform, &c.—i.e., slowness to

respond to light without marked myosis or mydriasis. 2. In a small proportion of cases of concussion temporary mydriasis (unilateral or bilateral) is met with. 3. When inflammatory reaction follows severe bruising of the brain myosis is the rule. 4. In compression of the brain, from meningeal hæmorrhage, mydriasis on the side of the lesion is met with in at least half the cases, double mydriasis occurring next in order of frequency, myosis being very rare. The pupil symptom here is probably dependent on pressure on the corpora quadrigemina rather than on the trunk of the third nerve. 5. In cases of injury to the cervical sympathetic active myosis does not occur, but the pupil on the side affected will not dilate in dull illumination. 6. From the preceding cases the course of the "cervical splanchnic" in man appears to be the same as that proved experimentally in lower animals.

The Reaction of the Pupil to Light: its Observation, Measurement, and Clinical Signification.—This subject has been exhaustively studied by Heddæus, of Halle. He considers that it is probable (*Ophth. Rev.*, p. 169) that there are special centripetal pupillary fibres, that these run in the optic nerve with the macular fibres, and that the pupillary fibres are more resistant to pathological processes than the visual. Also he agrees with Bechterew that these fibres probably do not pass into the optic tracts, and do not decussate in the chiasma, but pass back behind the chiasma directly into the grey matter surrounding the third ventricle, and so reach the oculo-motor nucleus of their own side. From this it would follow that dilatation of the third ventricle would cause dilatation of both pupils, and that unilateral destruction of the grey matter in the wall of the third ventricle would cause reflex insensibility on the same side. Of this he gives some evidence. He does not discuss pupillary change from disease of the pupillary reflex centre.

The local action of drugs on the intra-ocular muscles of mammals has been studied by Jessop (*Ophth. Rev.*, Vol. VI.), with the following interesting results:—

Eserin acts on the intra-ocular muscles as on the unstriated muscle of other parts by stimulating directly the muscular fibre.

The action of atropin is by paralysing directly the unstriated muscular fibre; that of eserin by stimulating such fibre; and that of cocain by stimulating the endings of nerves relaxing the muscles.

The experiments on the antagonism and combined actions of

these three drugs on the pupillary muscle show the following results:—

Atropin and Eserin.—In ordinary atropin mydriasis, the addition of eserin reduces the dilatation of the pupil, but if the *ad-maximum* atropin mydriasis be induced eserin has no effect. The reason of this is that as long as the muscular fibre is not completely paralysed eserin can stimulate it, and produce myosis, but when complete palsy ensues eserin has no effect. If eserin and atropin be used together myosis ensues first, and is afterwards followed by dilatation of the pupil. Atropin always overcomes eserin myosis if used long enough.

Atropin and Cocaïn.—Cocaïn mydriasis is not increased by atropin, but the pupil no longer acts to light and accommodation. Atropin mydriasis is usually increased by cocaïn, but, in rare exceptions, where the *ad-maximum* atropin dilatation has been produced, the addition of cocaïn has no effect.

Cocaïn and Eserin.—Full eserin myosis is never overcome by cocaïn. Eserin always reduces cocaïn mydriasis. The mixture of cocaïn and eserin (2 per cent. solution of each) in the proportion of 26 of cocaïn to one of eserin produces no change in the pupil.

Of the mydriatics belonging to the same group as atropin—viz., homatropin, daturin, duboisin, hyoscyamin, hyoscin, gelsemin, and scopolin—the physiological action is the same, and they differ simply in the intensity of their effects. The most important of them are homatropin and hyoscin.

Homatropin is the most frequently used, and its action is quicker, weaker, and less lasting than atropin.

Hyoscin is the strongest and quickest in its action, but though clinically very useful, it is dangerous in cases predisposing to glaucoma, as eserin has no effect on the mydriasis induced.

The other myotics—pilocarpin, nicotin, and muscarin—act on the unstriated muscular fibre of the intra-ocular muscles as eserin by stimulating it, and thus inducing contraction.

Pilocarpin is a much weaker drug than eserin, and the ratio of their respective strengths on the pupil may be estimated by their behaviour with cocaïn, when eserin is found to be seven times stronger than pilocarpin. Pilocarpin has no effect on the atropinised pupil.

Muscarin acts more energetically on the ciliary muscle than on the pupillary.

“The Influence of Mydriatics and Myotics on the Intra-Ocular

Pressure under Physiological Conditions" has received attention from Dr. F. Stocker, of Lucerne (*Archiv. f. Ophth.*, XXXIII.). He found *the Normal Intra-ocular Pressure* (Curare) varied from 25 to 32 mm. hg., being higher in vigorous than in feeble animals.

Atropin, applied to the conjunctiva in 1 per cent. solution, produced in all cases a gradual *fall* of the intra-ocular pressure; the fall was in one case as much as 10 mm. hg., in another 6 mm. The lowest pressure coincided with the maximal dilatation of the pupil.

Cocain, in 4 per cent. solution, *reduced* the intra-ocular pressure by 2 mm. or 3 mm. hg. In some cases a slight rise of pressure preceded the fall.

Eserin, in 1 per cent. solution, caused *first a rise* of pressure; *then a fall* of pressure greater than the previous rise. The pressure reached its highest point before the commencement of myosis. In the typical case given in detail the initial pressure was 28 mm.; the primary rise was 3 mm., which at the end of twenty minutes passed away; at the end of another twenty minutes the pressure had fallen to 22 mm., while the fellow eye had fallen to 26 mm.

Pilocarpin, in 2 per cent. solution, produced first general symptoms due to systemic absorption—viz., salivation in five to ten minutes, and during about forty minutes considerable oscillations of the intra-ocular pressure in both eyes due to systemic excitement. When these had subsided, the pressure *fell* in the pilocarpin eye to 4 mm. below that in the fellow eye.

The Action of the Pupil stands, according to the foregoing results, in no fixed causal relationship to the changes of pressure within the eye, for the pressure was seen to fall both during increasing mydriasis and during myosis.

In addition to the foregoing, Stocker made some observations with the ophthalmometer concerning the corneal curve under the influence of these several drugs. *Atropin* and *cocain* produced no change in the curvature of the cornea beyond such as might be due to errors of observation. *Eserin* and *pilocarpin* produced a diminution in the radius of the cornea; thus in one case the initial radius was 7.416 mm.; twenty-five minutes after the use of *eserin* it was 7.27 mm.

GLAUCOMA.

Much labour is yearly expended upon the endeavour to replace with light the darkness which at present invests the subject of the

pathology of glaucoma, and Priestly Smith, of Birmingham, has added one more to his already long list of valuable communications on this matter. In his article "On the Shallow Anterior Chamber of Primary Glaucoma" (*Ophth. Rev.*, Vol. VI.), he suggests a somewhat novel view of the case. We quote his words:—

"The vessels of the uveal tract are overfilled; the ciliary processes swell up; a part of the aqueous is expelled and the lens advances; the angle of the chamber is compressed. From this moment the intra-ocular pressure rises rapidly, and the obstruction at the outlet intensifies itself. The increased pressure within the eye embarrasses the escape of venous blood still further and aggravates the swelling of the processes; the engorgement increases, the lens is driven forward still more forcibly until not an atom more of the aqueous can be forced through the closed outlet; a shallow but firmly locked anterior chamber remains. The internal circulation of the eye is strangulated because the normal process of compensation by the aqueous is arrested. The external vessels dilate, and serum escapes in the directions of least resistance. This is acute glaucoma.

"The foregoing description of acute glaucoma involves a conception which, so far, at least, as I am concerned, is new. *The high tension depends more upon an excess of blood in the eye, than upon an excess of the intra-ocular fluid.* We see evidence of this fact in the free escape of blood which commonly accompanies an iridectomy for acute glaucoma.

"A shallow anterior chamber is less characteristic of the chronic non-congestive type of glaucoma than of the acute congestive. This of itself indicates the close connection of the symptom with vascular disturbance. I imagine that *glaucoma fulminans* is the expression of a maximum obstruction of the circulation, *glaucoma simplex* of a minimum, the conditions of the eye which predispose to the disease being similar in the two cases."

Birnbacher and Czermak, of Graz (*V. Graefe's Archiv.*, XXXII.), have contributed to our knowledge of the "Anatomy and Pathology of Glaucoma." They have shown that the glaucomatous eyes examined by them exhibited conditions tending to raise the intra-ocular pressure in the narrowing of lumen in the emissaries of the vortex veins, the adhesive inflammation round the venous trunks, and the thickening of their walls. (The ligation of even one vein, as Schultén has shown, is enough to raise the

pressure inside the globe by restricting the venous outflow.) Besides this restriction of the venous outflow the fluid of the tissues of the globe was prevented from escaping by the adhesive inflammation and thickening of the wall of the vein, and also by the obliteration of the angle of the anterior chamber.

The general conclusion of this highly instructive paper is that primary chronic inflammatory glaucoma is due (in some cases, though possibly not in all) to anatomical changes produced by antecedent inflammation in the anterior portion of the uveal tract, which hinder the outflow of blood and more especially lymph from the eyeball, and accordingly elevate the intra-ocular pressure.

OCULAR CONDITIONS IN BRAIN DISEASES.

Deutschmann, of Göttingen, has published a monograph "On Optic Neuritis, especially the so-called Choked Disc, and its connection with Brain Diseases" (Jena, 1887). Its conclusions are largely the results of his own and Leber's investigations and experiments. We quote from the *Ophthalmic Review*, Vol. VI., p. 107, &c. :—

"He states that in all the many cases examined before and after death by Leber and by himself, the changes could be regarded as due only to inflammation. In all there is exudation, with lymph corpuscles, in the tissue of the papilla and the surrounding retina, proliferation of connective tissue, and thickening of nerve fibres; sometimes an aggregation of lymph cells in the sheaths of the central vessels; and always an inflammatory change in the choroid adjacent to the disc, presenting dilatation of vessels, and more or less infiltration with lymph cells. In short, the microscopic appearances are indistinguishable from those of the papillitis, which accompanies leukæmia and nephritis. Further, it is noteworthy that the appearances of the so-called choked disc are met with, according to Brailey and Williams, in many cases of injury of the eye, where compression of the disc, as an essential cause, can play no part. Gowers states that in sections of the choked disc there is never any evidence of compression of the vessels at the point where they pass the scleral ring, but that such compression, when it occurs, is the result of the inflammatory swelling in the tissue of the papilla. Moreover, it is to be noted that the supposed agent in the choking of the disc, the fluid distending the nerve sheath, is by no means always present, even when looked for with every precaution in the way of ligaturing the nerve.

"From the anatomical standpoint, therefore, Deutschmann arrives at the following conclusions:—The so-called 'choked disc' (Stauungspapille) is from the beginning an inflammatory condition—a true neuroretinitis. There is no anatomical evidence in favour of the supposition that it is caused by compression of the ocular end of the nerve; the anatomical facts are opposed to this assumption."

Edmunds (London), in commenting on Deutschmann's views on Optic Neuritis (*Oph. Rev.*, Vol. VI.), remarks, in answer to Deutschmann's statement that as regards the frequency of occurrence of papillitis in intra-cranial tumour, "the precise seat . . . of the tumour appears to make no difference." In an analysis (*Ophth. Soc. Trans.*, Vol. IV., p. 172, 1884) of ninety-six cases of fatal cerebral tumour he found that optic neuritis was present in eighty-six per cent. of the cases in which the new growth was situated in the basal ganglia or in the cerebellum, whereas in only forty-six per cent. of those cases where the tumour was at the convexity of the brain did neuritis occur, a sufficiently noticeable difference as to frequency.

INFLUENCE OF MENSTRUATION ON VISION.

Finkelstein, of St. Petersburg, has investigated the subject of "Sensory Disorders in Diseases, and Changes of the Fields of Vision in Menstruation," which he has made the subject of an Inaugural Address.

Finkelstein studied the functional activity of the eye during menstruation in twenty healthy women, aged from nineteen to thirty-three. From this group of observations the following deductions may be drawn:—1. During the menstrual period there takes place a concentric narrowing of the field of vision. 2. The phenomenon makes its appearance one, two, or three days before the beginning of the hæmorrhage, reaches its greatest intensity on the third or fourth day of menstruation, and then gradually disappears about the seventh or eighth day of the period. 3. The narrowing varies in degree in individual cases. In general, it is more pronounced in those women whose menstruation is associated with malaise, headache, cardiac palpitation, and other nervous symptoms, as well as in those who lose large quantities of blood. 4. Not only the field of vision for white, but also the visual fields for green, red, yellow, and blue, undergo a regular diminution. 5. Perversion of perception of green (which is then seen yellow) is

observed fairly often (in twenty per cent.), the phenomenon disappearing simultaneously with the contraction of the fields. 6. The central vision becomes impaired but slightly, to rapidly return to the standard after catamenia. 7. Refraction remains intact.

THE POSITION OF THE HEAD IN WRITING.

Schubert, of Nürnberg (*V. Graefe's Archiv.*, XXXII.), has urged the importance of a proper position of the head in writing, and lays down the rule that all children should be taught a perpendicular handwriting. Even if the erect median position of copy book be not actually better than the oblique median, still the teacher cannot tell when inspecting writing done at home what absurd position may have been adopted in writing, if the child is permitted to write anything but perpendicular letters. These latter can only be executed in the erect median position. It may be possible for adults to write more rapidly a slanting than a perpendicular hand, but children are not required to write rapidly, but in a manner that does not tend to deform their vertebral columns or their eyes. In many countries now-a-days, and in times past, perpendicular handwriting alone obtains, and Schubert appends a series of facsimiles of German handwriting in every century from the 8th to the 18th inclusive. From this it is seen that slanting letters were not adopted to any extent until the 17th century.

PRIZE STUDIES OF TORNADOES.

THE *American Meteorological Journal*, desiring to direct the attention of students to tornadoes, in the hope that valuable results may be obtained, offers the following prizes:—For the best original essay on tornadoes or description of a tornado, 200 dollars. For the second best, 50 dollars. And among those worthy of special mention 50 dollars will be divided. The essays must be sent to either of the editors, Professor Harrington, Astronomical Observatory, Ann Arbor, Michigan, or A. Lawrence Rotch, Blue Hill Meteorological Observatory, Readville, Mass., U.S.A., before the 1st day of July, 1889. They must be signed by a *nom de plume*, and be accompanied by a sealed envelope addressed with the same *nom de plume* and enclosing the real name and address of the author. Three independent and capable judges will be selected to award the prizes; and the papers receiving them will be the property of the Journal which offers the prizes. A circular giving fuller details can be obtained on application to Professor Harrington.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—ROBERT M'DONNELL, M.D., F.R.S.

General Secretary—W. THOMSON, M.D.

SECTION OF PATHOLOGY.

President—C. B. BALL, M.D.

Sectional Secretary—J. B. STORY, F.R.C.S.I.

Friday, February 17, 1888.

MR. WILLIAM FRAZER, F.R.C.S.I., and subsequently the PRESIDENT, in the Chair.

Hydatid Cyst of the Deltoid Muscle.

The PRESIDENT communicated a case of hydatid cyst of the deltoid muscle. The patient, a housemaid, who had lived in the country, sought advice for a tumour on the outer side of her right arm. It had commenced three years previously as a small nodule, which afterwards gradually enlarged. She had not lived in houses where there were dogs. At first it was only after a hard day's work that she experienced any discomfort. When he (the President) saw her the skin was movable over left deltoid, but the tumour was deeply fixed. There was fluctuation, but it was not distinct. The nature of the tumour was not diagnosticated previous to the operation, and it was determined to explore it by an incision. On opening it six ounces of thin pus escaped, and a cyst was found about the size of a large grape. It was enucleated, and the capsule removed, and the wound healed under a single antiseptic dressing. At the commencement of the process of removing the capsule the impression was that it was a parent cyst, and that the other was a daughter cyst; but after dissection it became manifest that this was not the case, and that the capsule enclosed a worm. The extirpation of the capsule was completed, and the cavity

closed by deep sutures. No further suppuration took place. It might be supposed that the removal of the capsule was unnecessary, but the object of that was to render the wound aseptic, and the result justified the course taken. After a few deep sutures had been passed the whole thing healed under a single dressing, and no more pus was formed. After the cyst was taken out it ruptured almost immediately, and its walls were found to be very thin. No traces of hooklets or smaller cysts were found. Projecting into the interior of the sac was what might have been either a brood capsule or the retracted head of a cystoid worm. The enclosing capsule was opaque, and its contents could not be made out. It was found to be of the usual fibrous structure, and composed of connective tissue, and projecting into the interior of it were a number of small pedunculated masses of fat. The whole tumour when recent was about the size of a small orange.

MR. J. A. SCOTT stated that he had got a portion of the cyst wall, which he had cut into pieces and placed under the microscope. One section showed what slightly resembled the joints of a tapeworm, and afterwards there was a portion which he thought was the head of a tapeworm, and he also found hooklets, some in radical form, and others oblique. In another part of the specimen submitted to him he came upon fragments of hooklets. He had little doubt that the worm was *cysticercus cellulosus*.

The CHAIRMAN said that years ago he attended the family of a clergyman, whose wife and children got tapeworm from some beef that they had eaten. From the symptoms he felt certain that they had *tænia lata*. On the administration of remedies they all recovered, except a girl, seven or eight years old, who was attacked with curious brain symptoms, which included a staggering gait and screaming at intervals. He told her parents that she had a hydatid cyst in the brain. She expired at night in a convulsive fit. On a *post-mortem*, he found in the brain a cyst about the size of a walnut, and full of liquid.

DR. FINNY remarked that the occurrence of the *cysticercus cellulosus* in the human being was rare. The question was, how it could have got into the body of this young woman.

The PRESIDENT, in reply, said two forms of bladder worm were tolerably frequent in the human subject. One was the cystic form of the *tænia echinococcus*, and the other was the *cysticercus cellulosus*, which was the first stage in the development of the *tænia solium*. In Germany, where the *tænia solium* was of frequent occurrence in the human subject, the *cysticercus cellulosus* was also considerably frequent. In this country the *tænia solium* was almost unknown. Dr. Foot and Dr. Little had been unable to find a single specimen of it in the museum. It was well known in Germany that people suffering from the *tænia solium* could infect themselves and produce the *cysticercus cellulosus* in other parts of their bodies. With the common tapeworm, which occurred

in this country, that was not the case. There was only a single example, and it was very doubtful, of the cystic form of *tænia mediocanellata*, which was normally found in beef, occurring in the human subject. What was the nature of the cystic worm now before the Section? Now, from the existence of one retracted head, the absence of daughter cysts, and the fact that the retracted head had four suckers and a number of hooklets, they could not but conclude that it was *cysticercus cellulosus*. If it were an *echinococcus* cyst it would have no retracted head, but a broad capsule or budding from the interior of the cyst, in which a number of embryonic heads were commonly found. But all Mr. Scott's sections showed not a single head. As to this being a cystic stage of the common *mediocanellata*, that was negatived by the hooklets; so that they had only to conclude that it was the cystic form of the *tænia solium* which had become encapsuled in the muscle. When found in pork the *cysticercus* consisted of a number of scolices occurring through the muscles, but these were not in capsules.

Rupture of the Trachea, with Fracture of the Sternum and Rib.

DR. E. H. BENNETT exhibited an example of complete transverse rupture of trachea, and of fracture of the sternum, taken from the body of a man who had been killed by being crushed between a hoist, used in raising coal, and a wall. He was dead when brought to Sir Patrick Dun's Hospital. There was no external wound, but blood had poured from the mouth. The trachea was found ruptured transversely, and the fragments were separated by an interval of one inch. The œsophagus was bruised, but not torn; on the posterior wall the bruising was very defined, being circular in form, about the size of a threepenny piece. Much blood was shed into the tissues around the trachea and œsophagus, but none of the great arteries or veins were torn. The fracture of the sternum was very oblique from above, and in front downwards and backwards; its upper border passed across between the cartilages of the second ribs, while its mediastinal margin was placed below the level of third pair of ribs. The second and third ribs on both borders were also broken, and on the right the fourth and fifth also.

Dr. Bennett quoted some of the few cases of ruptured trachea recorded, referring particularly to Dunlop's case as most closely resembling, in its details, the case submitted to the Academy.

The fracture of the sternum was of interest on account of the rarity of such a fracture. Malgaigne recorded but a single example of it as having come under his notice, during an experience of ten years in the Hotel Dieu of Paris. During the last session of the Section he (Dr. Bennett) showed some examples of fractured sternum. Fracture of the sternum might be caused by a direct blow, by an indirect force, resulting from flexure of the trunk in the first instance, or by convulsive action,

resulting from the throes of labour or violent coughing. The present fracture had been caused by a nearly vertical thrust upon the sternum, which fell with special energy upon the fourchette, and ruptured the trachea. On the mediastinal side the fragments of the trachea passed down as far as the third and fourth ribs. Ordinary text-books contained no mention of this lesion. The earliest recorded case was one by a Dr. Lucius O'Brien, which occurred in the Edinburgh Infirmary in 1818, and was taken from a woman who had been kicked under the jaw and in the belly, and who died next day. In that case there was rupture of the larynx and upper regions of the trachea, and of the thyroid and cricoid cartilages. In the case known as Dunlop's, also a Scotch case, which occurred in 1818, the trachea was totally divided by the violence of the blow. It was taken from a boy who, while driving the gin of a coal-pit, put himself on the end of the lever, and as it went round he turned to look at something, and his throat came into contact with a post. He survived for several days in great agony. In a Liverpool case the injury was caused by the coupling chain of a railway carriage twisting round a man's neck. He recovered from the injury. In Berger's case, in which the injury was caused by a kick of a horse, the larynx was almost completely separated from the trachea. There was also an example of a vertical rupture from the bifurcation of the bronchi upwards. In the present specimen there was in the œsophagus a mark about the size of a threepenny bit, which evidently indicated the point of the beam or bar which did the injury.

The PRESIDENT said the principal feature in this fracture was its extreme obliquity. The only fracture of the sternum he ever saw was a directly transverse one.

Ulcerative Endocarditis.

DR. JAMES LITTLE submitted the following case of ulcerative endocarditis. The specimen was from a patient who, during last December and January, was a patient in the Adelaide Hospital. He was a silk-weaver, aged thirty-two, who had recently returned to this country after having spent a year in New York. Upon his admission it was evident that he was suffering from aortic valve disease. He had a well-marked double murmur along the sternum—the arteries being very visible, and the pulsations extremely collapsing; but the other symptoms which he presented did not appear to be those usually met with in cases of aortic valve disease. His mental state was rather peculiar. When he came in he was in such a state that he was barely able to leave his bed, yet he spoke of getting up and going back to America; and during the whole period of his illness it was impossible to get him to explain much about his symptoms, or what it was that distressed him. When asked whether he suffered pain or felt ill, he drifted off into growling complaints of the food that he got, or of his treatment in other respects. His pulse at his

admission was about 100, but during the two months that he survived it increased, and a few days before his death had reached 130. His temperature fluctuated a good deal, but was always above the normal, varying from 101° to 103° . His urine was always very highly coloured, turbid from urates, and of a high specific gravity—1030. At first it did not contain any albumen, but during the last three or four weeks of his life was highly albuminous. After he had been about three weeks in the hospital, he complained of severe pain in the right groin, which extended down the thigh, and prevented him from getting out of bed. At first the pain appeared in the direction of the femoral vein, and they looked for indications of a femoral thrombus, but it was found not to exist. About a fortnight later he complained of severe pain below the left costal arch, and such tenderness of the epigastrium below that arch that he thought peritonitis was present. During the last week of his life he complained of severe pain down his left arm, and did not appear to be able to move the arm. At that time he was in a listless, drowsy state, not speaking much, and taking little food. There had been a good deal of speculation as to what was wrong with him; it did not appear that his symptoms could be attributed to any mechanical lesion of the heart. He said that while in New York he suffered from malarial fever, and it was thought by some that malarial intoxication accounted for most of his symptoms. Others thought that there was a deficient supply of blood to the brain and central nervous system, due to insufficiency of the aortic valves, and that that was enough to account for most of the symptoms. He (Dr. Little) did not think either of these hypotheses sufficient. About three weeks before his death, and not till then, the idea occurred to him that the case was one of septic or ulcerative endocarditis. Acting on that guess, he endeavoured to flood the man's blood with sulpho-carbolate of sodium, but it did not prove efficacious. He died two months after his admission. A *post-mortem* was made by Dr. Bewley, who found the lungs too full of blood, especially in the most dependent parts, which was doubtless due to the length of time the man had lain on his back in bed. His liver was likewise too full of blood, but had no other morbid appearance. The kidneys appeared quite healthy, save that the left one had two or three fawn-coloured infarcts. The spleen, over which at one period of his illness he complained of severe pain, was found to be very much enlarged, and in its centre was a considerable-sized abscess, from which, when opened, two or three ounces of chocolate-coloured fluid flowed. There was also a small abscess in the upper end of it. The right cavities of the heart were empty. The whole heart was rather bigger than it should be—the enlargement being due to thickening of the walls, and some increase in the size of the cavity of the left ventricle. The aortic valve, on being tested, was found to be quite incompetent; a stream of water flowed through it. On

opening it all the valvules were found to be more or less puckered and thickened. The first portion of the aorta did not present, on the surface, any distinct indication of change; on cutting it across the coats were found to be much thickened. The most characteristic appearance was on the anterior curtain of the mitral valve—a patch nearly as large as a florin, distinctly ulcerated, and covered with luxuriant vegetation. Some of this vegetation, and also vegetation from the kidneys and spleen, had been microscopically examined by Dr. Bewley. It left no doubt that the disease was, as he had guessed during the patient's life, ulcerative endocarditis. Though this was a rare affection, it was not so rare as was generally supposed. He could recollect several cases which went to a fatal termination, uninfluenced by care or drugs, and which were not understood at the time, and which he now believed were cases of this septic malignant ulcerative endocarditis.

DR. BEWLEY said the vegetation was composed partly of fibrin. The portions which appeared blue under the microscope disclosed an enormous number of micrococci. On the anterior wall of the left ventricle, below the aortic valve, there was a small amount of vegetation, in which also there were micro-organisms. In the infarcts found in the kidneys there were no microbes, but there were a considerable number of micro-organisms in the small infarcts of the spleen, and there were also thrombi in some of the splenic arteries.

THE PRESIDENT said the interesting question was as to the origin of the septic poisoning. In a case of a man who died in Sir Patrick Dun's Hospital of ulcerative endocarditis, the septic infection was traced to a diseased femur.

DR. WRIGHT mentioned a case of a lady, about twenty-three years of age, who, for two years, suffered from thrombosis in the veins of one of her legs, followed by secondary pneumonia, and afterwards showed symptoms of valvular disease of the heart. She apparently recovered, but after six or seven months began to get anæmic, and developed a murmur at the mitral orifice. Her temperature rose, and at first it was thought that her case was simply one of anæmia, complicated with febrile conditions. Her next symptom was permanent pains about the lower extremities, not in the course of the veins, but joint-pains. When he first saw her she appeared to be suffering from sub-acute rheumatism, was very anæmic, had a temperature of 102° , and a good deal of pain about her ankles. These symptoms disappeared, except the febrile condition, and she began to suffer from head symptoms, and it was thought that the case might be one of tubercular meningitis. The symptoms pointed to anything rather than the heart. Then after a couple of months there came a sudden development of the area of the murmur, which raised the probability that the heart trouble was the principal one. The murmur increased rapidly in intensity, and at the same time all her

symptoms increased in gravity. Ultimately she sank from blood-poisoning. One of the symptoms noticeable before death was pains in the fingers, accompanied with swelling of the tips of them, which lasted for a few days, and then passed away. The most noticeable point near the termination of the case was that all pulsation of the arteries of one of the arms suddenly disappeared, which was owing to detachment of the membranes from one of the diseased valves.

DR. LITTLE, in reply, mentioned that in the winter of 1882 he, in conjunction with the late Dr. Brady, of Harcourt-street, saw a lady who was suffering from double femoral phlebitis, with an immensely-swelled leg, and pneumonia of the left lung. She made a very imperfect recovery. Afterwards she became anæmic, and got a slight hemiplegic seizure, with loss of power in one arm and leg, from which she never entirely recovered. One ankle-joint got inflamed, and the inflammation appeared to be rheumatic. When he first saw her there was a barely perceptible murmur, but it gradually increased in intensity and area until her death, and he had no doubt that the case was one of ulcerative endocarditis, although that diagnosis was not verified by any *post mortem*. The practical conclusion from this and other such cases was that in obscure febrile illnesses, with widespread symptoms, pointing sometimes to the kidneys, sometimes to the brain, and sometimes even extending to the eyes, ulcerative endocarditis was to be looked for.

Intra-Uterine Amputations.

DR. E. H. BENNETT read an account of a dissection of the stumps obtained in a case of intra-uterine amputations of the fingers and toes.

Having referred to the observations of Montgomery and of Simpson, and particularly to observations of the latter authority on the supposed power of reproduction of parts amputated in this way, Dr. Bennett stated that the determination of the truth of Simpson's theory could be decided only by careful dissection of such deformities. With this view, as an account of the dissection of the ordinary stumps, except of the most meagre kind, had not been published, he had made the dissection, in the hope that at some future time an opportunity might arise to examine similarly examples of the group referred to by Simpson. He showed, with the dissection of the stumps left by intra-uterine amputation, an ordinary surgical stump of finger amputation.

The point of chief interest seen in contrasting these specimens was the absence of neuromata on the ends of the nerves in the intra-uterine as compared with large and well-defined tumours in the surgical stump. Also the fact that all these intra-uterine amputations had been disarticulations, and each preserved almost a complete joint between the extremities of the bones and the soft structures of the ends of the stumps. The anatomical changes in the circular grooves of the digits where

amputations had not been completed, and the condition of the several muscles, &c., of the limbs involved, was described.

The PRESIDENT asked were the nerves of the extremity of normal size up to the amputation, or did they exhibit signs of atrophy?

MR. FRAZER remarked that in all cases of this sort there was generally a history from the mother of some fright or start. He remembered a case of amputation of the foetal forearm, which the mother insisted had been produced by a fright she received from a beggar thrusting his hand towards her face. On one occasion he was called in to see the child of a Jewish lady, a little girl who had got a severe cut. The mother thought the cut very serious, but it was not; a little sticking-plaster made everything right. The lady herself was three or four months gone in pregnancy at the time. She went to the end of her time, and her child was born. Before ever she saw the child she said to him, "You remember the other child's cut; see if there is a scarlet mark on the infant's thumb?" He looked and found a scarlet mark on the thumb. In the case brought forward by Dr. Bennett it might be a question as to whether the amputation had not been caused by atrophy of the nerve-tissue. The late Dr. Adams had a case of a boy, nine years old, who received a blow on the head from an Italian iron, which caused a portion of brain to come away, and there was subsequently a cessation of the growth of his frame on that side. No doubt there were numbers of cases in which Dr. Montgomery's explanation that the amputation had been caused by a band of lymph was satisfactory.

DR. BENNETT, in reply, said there was no sign of arrested development in the specimens now before the Section. It was simply a case of removal by something twisted round the part, the nerve-cords being perfect down to the line of amputation without any defect of structure. The muscles of the forearm, though small, were perfectly normal both at the back and front; and the nerve-fibres maintained their character as such up to the scar-tissue, where they ceased to be nerve-fibre at all.

The Section then adjourned.

Friday, May 4, 1888.

The PRESIDENT in the Chair.

Specimen of Unreduced Dislocation backwards of the Bones of the Forearm.

DR. E. H. BENNETT exhibited a specimen of unreduced dislocation backwards of the bones of the forearm, preserved in spirit, and with it six similar specimens, preserved after maceration. He said his object in bringing forward these specimens was to draw attention to the fact that, although the varieties and conditions of elbow-joint dislocation had

been very fully described, yet still, as regarded the point with which he was about to deal, the descriptions of this commonest of dislocations were, even at the present day, such as were calculated to mislead. They tended to errors of diagnosis. Take Erichsen's description of this lesion:—"The most common dislocation is that in which both bones are thrown backwards, with or without fracture of the coronoid process. This injury is readily recognised by the projection backwards of the olecranon, carrying with it the tendon of the triceps. The articular end of the humerus also can be felt projecting in front of the elbow. When the coronoid process is not broken off it is fixed against the posterior surface of the humerus, the forearm being immovably placed in its new position. When this process is fractured there is great mobility about the joint, and crepitation may be felt as the arm is drawn forwards." Now he (Dr. Bennett) placed before them three specimens in which there was complete dislocation of both bones backward, the coronoid process resting behind the trochlea of the humerus. To these such a description as that he had quoted from Erichsen applied exactly, but it necessarily excluded every other variety of dislocation of both bones backwards. It ignored such a thing as incomplete dislocation backwards of the bones of the forearm, of which four examples were placed on the table. Incomplete dislocation had been first described, with great care—as far as exact description could go—by Malgaigne, but it had been long a subject of discussion as to whether it was not known to Hippocrates. The important feature of the incomplete, as contrasted with the complete, is briefly given by Littré:—"The incomplete luxation backwards is the only one in which the olecranon does not appear sensibly altered in position." Denucé, following Malgaigne, has stated clearly the pathological difference between incomplete and complete dislocation, putting it in a very few words, and pointing out in incomplete dislocation the presence of the coronoid process at the level of the trochlea. In the undissected specimen of incomplete dislocation, as well as in the three other old specimens, now before the Academy, the hardly appreciable displacement of the olecranon is well marked. The following description of the injury was given by Hamilton, the chief of the American authorities:—"The relation of the olecranon process also to the condyle is changed, and the upper end of this process, instead of being a little below the internal condyle, as it would be naturally when the arm is slightly flexed, is found carried upwards towards the shoulder, from half an inch or more, above the condyle." From the conditions seen in any one of the specimens, it was clear that in incomplete dislocation no such change in the position of the olecranon occurred. Hamilton makes no allusion whatever to the incomplete dislocation. Another authority of great weight, South, said:—"The dislocation backwards is the most common and always the most complete. The coronoid process of the

cubit gets behind the pulley-like joint surface of the upper arm bone and rests in the pit formed by the olecranon." That was a description of complete dislocation, no mention being made of incomplete. One of the most recent writers, Tredof, in his recently-issued book, says:—"Dislocations of the elbow of all kinds may be partial or complete. More usually they are complete when in the antero-posterior direction, and partial when the luxation is lateral." That almost excluded the existence of the incomplete dislocation backwards. It had been admitted by Malgaigne, and by those who studied the lesion about the time that he wrote and since, that incomplete dislocation of the elbow was more common than complete dislocation. Incomplete dislocations, such as are illustrated by the recent and dry specimens before the Academy, have been allowed to go unreduced because they have not been recognised. Such error arises in great measure from reliance on the test given by the authorities quoted—the displacement of the olecranon above the line connecting the condyles of the humerus. This displacement is present in complete dislocations, but it is absent in the incomplete. To ignore the existence of the incomplete dislocations, or to teach that they are recognised by displacement of the olecranon "half an inch or more above the condyle" is to ensure that they will remain unreduced. Now, it is admitted that backward dislocations of the elbow are the most common variety of displacement of the joint, and of these the incomplete are the more common. In museums, at all events, the latter are the more common, perhaps because they are those most frequently left unreduced. In the moist preparation before the Academy no doubt can exist as to the relative position of the bones—a doubt that some might entertain in the case of the macerated specimens. In the words of Malgaigne, "the projection of the olecranon is on a plane sensibly beneath the projection of the epitrochlea, whilst in the complete luxation the olecranon is placed sensibly above that process." My attention having been directed to the subject by obtaining this recent specimen, I have thought it well to reiterate the statement of Malgaigne—though it was sufficiently distinct, and though it ought to be familiar to writers on the subject—that the incomplete form of dislocation backwards at the elbow does occur; that it is the more common form of dislocation of both bones, which, by being left unreduced, subsequently become museum specimens; and that it probably remained unrecognised because the test of the elevation of the olecranon, relied on in the descriptions of complete dislocation, is applied to it. It is very easy for an incomplete dislocation to be overlooked when a certain amount of swelling conceals the various features, including the existence of the tumour formed by the displaced humerus in front, and the abnormal projection of the head of the radius backwards. The specimen before them exhibited these peculiar characteristics of partial dislocation; in fact, looking at the back of the elbow,

one would say that there was no dislocation at all of the ulna. But the radial dislocation caught the eye, and in front the humerus projected as an unmistakable tumour.

The PRESIDENT said there had been no more important communication recently in the Section than that with which they had been just favoured. He would ask what symptoms this partial dislocation presented during life; whether it was easy of diagnosis; and whether Dr. Bennett had satisfied himself of its existence in the case of any living subject.

SIR WILLIAM STOKES asked what were the signs that would enable them to diagnosticate this injury during life. Where there was little or no alteration in the position of the olecranon relatively with the other osseous points, and remembering how rapidly swelling set in in the case of such injuries, the diagnosis of the exact nature of the injury seemed almost an impossibility. Every practical surgeon knew the difficulty of estimating the exact nature of injuries of this class, especially a short time after they had been received; and that difficulty was enormously enhanced by the fact of little or no alteration existing in the position of the olecranon relatively to the condyles of the humerus.

Dr. BENNETT, in reply, said he desired first to refer to one point in which the complete dislocation, when unreduced, differed very markedly from the incomplete. In the latter form, when it was unreduced, the displaced bones assumed at their ends a quadrilateral shape, whereas in the complete dislocation there was nothing of the kind; the bones lay all free of each other, and there was no unusual modification of shape. With regard to the questions put by the President and Sir William Stokes, he could only repeat the words of Malgaigne, that in the incomplete dislocation "the forearm being a third flexed, the projection of the olecranon was on a plane placed sensibly beneath the projection of the epitrochlea, whilst in the complete dislocation the olecranon was placed sensibly above." There was this in addition, that, in the living subject, in the incomplete dislocation, although the olecranon projected less it did project somewhat. The appearance of the olecranon beneath the level of the two condyles marked the incomplete dislocation. Again, the incomplete dislocation was a very fixed lesion—hardly any movement of the dislocated bones was possible. In complete dislocation, on the other hand, the bones could be moved laterally with great freedom, particularly as the coronoid process was broken away. The ligaments were untorn to a great extent in the incomplete dislocation, and the bones were retained in a state of unstable equilibrium. There was a great difference in practice also, as regarded the two lesions. As Malgaigne had pointed out, the incomplete dislocation was reduced with great ease—although it was so fixed—and could be reduced long after the occurrence of the injury—even so long as two years. On the other hand, the lapse of even a month after a complete dislocation was sufficient to render it

absolutely irreducible. This was a fact of immense importance in estimating the force to be applied to an unreduced dislocation. The experience of all surgeons was, that irreducibility occurred very early in the complete lesion, although it was very movable, while the incomplete dislocation could be reduced many months after the injury, although with difficulty. He could add nothing to the facts which were published concerning the injury in question by Malgaigne and De Musset so long ago as 1854 and 1855.

Case of Acute Lobar Pneumonia and Chronic Bright's Disease.

DR. JAMES LITTLE communicated a case of acute lobar pneumonia and chronic Bright's disease in a boy aged four years. This boy was admitted into the hospital under his care on the last day of last March. According to his mother's account, he was in perfectly good health until two days previously, and on the day before his admission was playing about the house. The only thing she noticed—and it was what led her to bring him to the hospital—was that he had become swollen all over the body. The swelling first appeared in his face. When admitted he presented the typical appearances of a case of acute Bright's disease. He was extensively anasarcaous; and there was some ground for believing that fluid existed in the peritoneal sac. He passed only four ounces of urine during the first twenty-four hours he was in the hospital—a quantity insufficient to float a urinometer, so that the specific gravity of the fluid could not be ascertained. It was muddy rather than high-coloured, and when boiled proved to be exceptionally albuminous, the coagulum filling three-fourths of the bulk of the urine. Under the microscope it showed an immense number of uric acid crystals, and numerous granules. His temperature was rather high, exceeding 104°. He had a little cough, not much, and no special hurry of breathing, save that on one occasion, when put into a warm bath, his breathing rose to 76. He was recognised as a child that had been in the hospital ten months before under the care of Dr. Beatty for acute Bright's disease; and the record showed that before he left the hospital at that time his urine was entirely free from albumen. The students who saw him recollected his appearance, and that he was swollen then but not to the same extent as the last time. He lived only three days after his admission. The *post mortem* showed a great deal of anasarcaous fluid and some pleuritic fluid. The kidneys, instead of being bloody and congested, were pale, with the exception of a slight zone of congestion at the base of the pyramids. On the thorax being opened it was found that he had suffered from acute croupous pneumonia, which was not discovered during life. When the specimen was recent it was an exceedingly beautiful specimen of what Dr. Wilkes had described as a curious inflammation which was capable, in a few days, of converting the spongy texture of the

lungs into a structure like cheese. Even now the upper lobe of the right lung presented the typical appearances of true croupous pneumonia; but they found what did not so frequently exist in such cases—namely, three centres of pneumonic process, one in the middle lobe, and two in the lower lobe of the same lung. The kidneys were microscopically examined by Dr. Bewley, who found the convoluted tubules almost completely choked by swollen epithelium and albuminous material. It was difficult even in the light of the *post mortem* to read the case. The impression on his mind after the *post mortem* examination was that it was acute pneumonia occurring in a patient who had previously been the subject of chronic Bright's disease; because it had been his experience that when pneumonia attacked a person who had previously been the subject of chronic Bright's disease it was rapidly fatal. The microscopic appearances found by Dr. Bewley hardly accorded with the existence of chronic Bright's disease. On the other hand it was very difficult to understand why a child could become so extremely anasarcaous as this child was from acute Bright's disease, and have kidneys which, instead of being bloody and dripping were much paler than kidneys usually were after death in cases of acute Bright's disease. While the boy was alive he examined his chest on two or three occasions in search of pleural effusion; but, finding no sign of it in the lower part of the lung, he did not examine the upper portion. The boy's decubitus was invariably on the back, with a slight turn towards the right side.

Unreduced Dislocation of the Elbow.

MR. J. LENTAIGNE submitted a case of unreduced dislocation of the elbow, with fracture of the lower end of the humerus. The two casts presented were taken from a patient who came under his care in the Mater Misericordiæ Hospital some time ago. The case was one of those dislocations which were so commonly seen, but in which they could rarely prove whether the diagnosis was correct or not. The two casts represented the extremes of extension and flexion of which the limb was capable. The powers of pronation and supination were completely lost; the patient could not bend his forearm to within half-a-foot of his mouth, and the functions of the limb were in every way exceedingly impaired. Cases of the kind were often met with, and were variously diagnosticated as a dislocation or a fracture, or a fracture and dislocation. In this case the patient was anxious to have something done with his limb; and accordingly he (Mr. Lentaigue) excised the injured part, and was consequently enabled to investigate all the conditions. The patient was a boy aged fifteen. About a year ago he was violently pushed against by a horse, and the palm of his hand, held out in a semi-extended position, was struck by the horse's flank. He felt great pain, and his elbow was rendered completely powerless for a while. It occurred in the country, and he went to

a dispensary doctor, who told him his elbow was sprained and gave him something to rub to it. At the end of a fortnight the arm was no better. He went to a bone-setter, who twisted his arm backwards and forwards, causing him frightful pain; and his arm then became utterly helpless. The account he gave to him (Mr. Lentaigne) proved that only a portion of the mischief was caused by the horse, and that the bone-setter was responsible for a good deal more of it, although how much more it was impossible to say. When he excised the joint last November he found a dislocation of the forearm backwards, with a fracture of the lower end of the humerus through the epiphysis. The lower epiphysis was broken into three portions. The line of the fracture could be seen clearly through the lower end of the bone. The olecranon fossa was reduced to a groove so narrow that his finger barely went into it.

DR. BENNETT said he did not quite admit the diagnosis of an unreduced dislocation; and he saw no necessity for assuming the existence of a fracture as the explanation of such a condition. The idea of an epiphysary lesion should be put aside. In the casts the tumours formed respectively by the olecranon and the head of the radius were normally distant.

MR. LENTAIGNE, in reply, said that though he had the greatest respect for Dr. Bennett's opinion, he could not help holding to his own in this instance. It was hard to understand how mere dislocation could have produced all the changes that were exhibited in the specimen which Dr. Bennett himself had exhibited; and he (Mr. Lentaigne) was not absolutely certain that it was not a case of fracture. In his own case it was a curious thing that there should be a disappearance of the cartilaginous surfaces in lines apparently corresponding to the lines of a fracture running across the articulation. The patient had now got a joint perfect in all respects, and he intended to exhibit him at the next meeting of the Surgical Section.

Three Cases of Intestinal Obstruction.

The PRESIDENT gave an account of three cases of intestinal obstruction, the viscera of which were on the table. The first case was that of a man, aged twenty-seven, who stated that he was quite well until the 12th of February in the present year. On the 17th of that month he came to the dispensary and was examined by Dr. T. E. Little, who found symptoms of intestinal obstruction, but after a minute examination could only discover a slight tumour in the inguinal region, which appeared to be obviously not a hernia but an enlarged gland. On the 7th of March he came under his (Dr. Ball's) care in the hospital, and stated that since he applied to the dispensary he had had no fæcal motions, save a little mucus, and that only after great straining. The glands on both sides of his groin were then enlarged, and in the right iliac fossa was a tumour nearly as large as a cocoa-nut. An examination by the rectum discovered a tumour

pressing back the sacrum, which was as large as a foetal head. There was no fluctuation in any part of the swelling. All attempts to procure evacuation having failed, an exploration was made, and the interior of the peritoneum was found to be studded with small tumours, while in the iliac fossa was a large soft tumour, to which the small intestines were adherent. The colon being free, was taken out, and an artificial anus was formed at its middle line, from which copious motions came that at first gave the patient great relief. Gradually, however, the faecal flow through the artificial opening stopped, and the man died with symptoms of obstruction higher up. On a *post mortem* an enormous mass of brawn-like tumour was found filling up the greater part of the abdomen. When freed from the intestines and surrounding parts it weighed 10 lbs.; and yet it had grown in less than six weeks. A portion of it surrounded the rectum and pressed it so completely that nothing could pass through. The portion of the sigmoid flexure, which was drawn out to make the artificial anus, could be seen in the specimen. The immediate cause of death was not obstruction of the large intestine, but a secondary obstruction of the small intestine caused by the pressure of the tumour against the parietes of the abdomen. That this pressure produced complete obstruction was evident from the appearance of the intestine both above and below the seat of pressure. Dr. Purser had examined the tumour and pronounced it to be a sarcoma.

The second case was that of a woman, aged thirty-six, who was admitted into the hospital on the 29th of March. For a week previously she had been constipated with vomiting every day, and had taken a variety of medicines, but without effect. A marked feature of the case was that there was no evidence of distension of the intestines by gas. That led to the diagnosis of an obstruction high up, and on the same day laparotomy was performed. After searching for obstruction at the usual hernial point, they were guided by a portion of inflamed intestine to the left hypochondrium, and there found a large mass of intestine several feet in length, much congested, roughened on the surface, and tightly constricted by a ring formed in this way. A loop of the jejunum was adherent to another knuckle of the small intestine by a band from behind—the remains of which could be seen in the specimen—and underneath this band was protruded the great mass of the ileum, which was constricted by a ring formed by the mesentery below, and at the sides by the knuckle of small intestine and the bands that connected the two of these together. A curious feature, noticed at the time, was, that the greatest amount of congestion of the intestine, and presumably, therefore, the point of greatest strangulation, was not in the portion of intestine protruded underneath the band, but in the upper of the two loops of intestine connected by the band, as if the seat of obstruction and strangulation was at the higher loop. The operation relieved the symptoms; but the wound

opened six days afterwards, and a portion of the omentum prolapsed, and the case became septic and she died. On a *post mortem* they were just able to find out where the obstruction existed. There was no general peritonitis about the seat of the obstruction. There was some inflammation of the omentum and also in the pelvic cavity. Although the case was septic it was also afebrile, the woman's temperature never having risen above 99° during the ten days that she lived.

The third case was that of a man, aged sixty-nine, who was quite well until three weeks before his admission to hospital, when he began to suffer from loss of appetite, constipation and distension of the abdomen. When he came in the distension was so excessive that no examination could be made. An examination by the rectum revealed nothing. A localised tympanitic distension of the abdomen was at first thought to be due to a dilated stomach, but that was negatived by the passing of a tube. Ascites was noticed on the 4th of April, a week after he came in. The bowels ceased to act on the 11th of that month, and on the 14th he died somewhat suddenly. On a *post mortem* a large quantity of ascitic fluid was found in the peritoneum, and the surface of the intestine was covered with little masses of secondary cancer like boiled sago. In the liver were found several little depressed umbilicated patches, such as they were familiar with in cases of secondary cancer. On searching for the focus of obstruction it was found to be in the tissues surrounding the cæcum, where there was a large hard mass, the gut itself being considerably constricted. Below that point the large intestine did not appear to be obstructed, the great distension observed during life being apparently of the transverse colon, and therefore below the seat of greatest narrowness. A section of the growth made by Dr. Weir showed it to be an ordinary cylinder called carcinoma, such as was commonly met with in the intestinal tract. A point which he was at a loss to understand was, that they were unable to find any portion of the intestine in which the mucous membrane was implicated. The mass at the cæcum was entirely in the structure and outside the mucous membrane, differing in that way from ordinary cases of cylinder-celled carcinoma, in which the growth originated in the gland tissues of the intestinal mucous membrane.

The CHAIRMAN said the cases showed the advantage and the harmlessness of exploration of the abdomen.

MR. LENTAIGNE remarked that some time ago he saw a case of constricted intestine which was operated on. The operator pulled a band of intestine out of a loop formed by other portions of the intestine and paid no attention to the latter. The case died, and on a *post mortem* it was found that the seat of obstruction was not in the first band but in another attached to the loop.

DR. LITTLE said the second case was of the greatest interest. He

regretted that Dr. Ball had not mentioned in more detail the earlier symptoms of the case. In cases of abdominal mischief there was no more serious question for the physician than that of deciding whether the cases should be handed over to surgical interference or not. He had heard a distinguished London physician say that diagnosis of intestinal obstruction was all guesswork; and though he did not quite agree in that opinion, still he held that to diagnosticate the precise lesion was very difficult in all cases of intestinal obstruction. In the first and third cases, in which the obstruction occurred gradually and was plainly the result of malignant mischief, diagnosis was not so difficult, or the need of operation so urgent. But in the second case, where the onset of the obstruction was comparatively sudden, the propriety or the reverse of surgical interference was an exceedingly anxious question. He was therefore anxious to know whether the earlier symptoms included collapse, sudden pain, vomiting, or suppression of urine. The seat of pain gave very little information in cases of the kind. In cases that he had examined after death, the disease was generally quite away from the place of pain. Some years ago a case came under his notice of a young lady who, while walking up Leeson-street, was seized with severe pain in the epigastrium. In the middle of the night she was seen by Dr. Beatty, and he (Dr. Little) saw her the following morning. Her pain was still in the epigastrium, and she was so collapsed that surgical interference was out of the question. He thought that she had an old ulcer in the stomach, which had perforated. She died in the afternoon; and a *post mortem* having been allowed, it was found that there was a twist of the small intestine, which was adherent to the fundus of the uterus—a long distance away from where she complained of the pain.

DR. FINNY said he saw two of the President's cases before they were operated on. In the second case the symptoms were thoroughly confusing, both as to the cause and the seat of the obstruction. The impression he formed was that it was a case of volvulus, or burst of the bowel. They passed up sixteen inches of a tube, and whatever was thrown up was instantly returned. The woman referred to no special place as the seat of pain. She had incessant vomiting and dry retching. Her urine was free from any indican, and was of fair quantity. Therefore, the symptoms all seemed to be in the large and not in the small intestine; and he thought the unfortunate termination of the case was due not to strangulation of the bowel from being inserted in the adherent loop of intestine, but to paralysis of the bowel due to local dragging by the band of adhesion, and to inflammation of the upper portion of it. And if Dr. Ball had been satisfied with relieving the involved bowel, perhaps the result of the case would not have been unfortunate. There was no history of any former illness. The case impressed him with the advisability of as soon as possible having laparotomy performed in such

cases, for the purpose of ascertaining where the seat of the obstruction was.

The **PRESIDENT**, in reply, said he believed that the causes which led to the woman's death were preventable. The relief of the strangulation was quite successful; the bowels were moved abundantly, and the vomiting stopped for some days. It was only when the unfortunate accident happened, and the wound became septic that the vomiting returned. As to the early symptoms of the case he did not know exactly what they were. All the history they got was, that for a week before her admission she had vomiting and constipation, and that these gradually increased up to the day when she was brought into the hospital, when she was very seriously ill. The character of the vomiting, taken with the history given them, left no doubt that she was suffering from intestinal obstruction; but there was absolutely no symptom to lead them to an opinion either as to the nature of the obstruction or as to where it was. As to pain, she always complained of its being in the right iliac region as far as possible from where they found the obstruction. The operation disclosed that the knuckle of intestine which was situated highest up, and which was connected with another one by a band, was the most congested, being of almost a plum colour, like a very tightly strangulated hernia. So that not only was there obstruction, but also strangulation of that portion of the intestine, by which he meant interference with the blood supply to the part, and with the return of the venous blood from it. The appearance negatived the theory of Dr. Finny that it was simply a paralysis from pressure. As to the strangulation coming so gradually on, the explanation would seem to be the same as was given in a case of large hernia, where a piece of intestine descended and gradually enlarged and became congested, and then exerted an amount of pressure sufficient to produce strangulation; and that, he thought, was what occurred during the week previous to the woman's admission to hospital.

Secondary Cancer of the Lung.

DR. G. P. L'E. NUGENT communicated a case of secondary cancer of the lung. **T. K.**, aged twenty-six, a metropolitan policeman, was admitted into the Whitworth Hospital on Feb. 8, 1888.

On admission he complained of great weakness, slight pain between the shoulders and lower part of abdomen. He had a wasted, haggard, and anxious expression, and was sweating profusely. His temperature was normal, and pulse slightly accelerated. He had a slight cough, of which he did not complain, and a very scanty frothy expectoration. The respirations were not appreciably hurried.

On examination of his chest very few physical signs could be discovered. A slight degree of dulness behind over the base, and fine râles could be heard over the lungs generally. The chest expanded well

on deep inspiration without producing a cough, and there was no difference between the two sides as regards vocal fremitus and resonance.

A few days after admission his right testis was found to be hard, slightly nodular, of about equal size with the other, without any adhesion of the skin.

He remained in much the same condition for over a week, being greatly troubled by obstinate constipation. Enemata brought away a large quantity of scybalous masses, but this gave no relief to the steadily increasing pain in the lower part of the abdomen. The belly was retracted and tender on pressure, and the muscles rigid.

On Feb. 23rd he was troubled with vomiting of a green fluid, which continued for some days. Hiccough was also present from time to time.

On the 26th he complained of great pain over his heart, and distressing palpitation, his pulse at this time being 130.

These symptoms moderated in a few days; but the pain in his abdomen had by this time become so intense as to be almost unbearable. The sweating continued to be most profuse, occurring by night and day, and increased by the paroxysms of pain. He occasionally complained of a slight pain in the right testis. His temperature during his illness never exceeded 99° in the evening, and was normal or sub-normal in the morning.

His expectoration became abundant towards the close, but was always frothy and never bloody. He never complained of dyspnoea. Shortly before his death, however, his respirations were hurried, and loud bubbling râles could be heard over both lungs. He died of asthenia on March 22nd.

The patient's family history was good, and he never had had any serious illness himself. He noticed the hard lump in his testis about three months prior to admission, and began to feel generally unwell at the same time. He remained on duty till one month before admission.

Autopsy.—On raising the sternum a small quantity of clear fluid escaped, and a large mediastinal gland had to be detached from the bone.

The right lung was perfectly free and easily removed, but the left had some pleuritic adhesions, notably at the apex, and there was a small quantity of clear fluid in both pleural cavities. Both lungs are covered over in all parts with innumerable nodular masses, varying in size from that of a walnut to that of a pin's head, more or less round in shape, projecting externally and into the lung, covered over with a perfectly smooth layer of pleura. The nodules are yellowish-white on section, and are of rather a soft consistence. The lungs internally are congested and œdematous. The mediastinal glands are much enlarged, and the weight of the lungs, heart, and glands collectively is 177 ozs.

The glands on left side of neck were enlarged and softened in centre.

The liver is enlarged, 84 ozs.; pale in colour.

Right kidney, 6 oz. in weight; pale. Left, normal.

Spleen, normal.

Stomach and peritoneum free from disease.

The abdominal glands greatly enlarged, particularly along the course of aorta; some over-lapping it, and one, particularly large, lying on the inferior vena cava, at the level of the third lumbar vertebra.

Of the testicles, the left was normal, but the right was hard and heavy, slightly nodular, but little increased in size.

Pulmonary Artery with two Valves.

DR. A. W. FOOT exhibited a specimen of a pulmonary artery with two valves, of equal size. [The description will be found at page 100.]

DR. BAWLEY said he once saw a similar form of aortic valve. It was taken from a man who had suffered from a nervous affection of the heart. There were two large flaps, each a good deal larger than the aortic flap, and between these a very small third flap measuring between a third and a fifth of an inch across. They were all perfectly healthy. During life the aortic sounds of the heart had been perfectly healthy.

DR. FOOT, in reply, said the formation of two ordinary-sized flaps, with a small one between them, was a well-known one. In the museum there was a pulmonary artery with four valves.

The Section then adjourned.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—ST. JOHN BROOKS, M.D.

Sectional Secretary—H. BROOMFIELD, F.R.C.S.I.

Friday, March 2, 1888.

The PRESIDENT in the Chair.

Demonstration of Fifteen Models illustrative of Brain-growth and Cranio-Cerebral Topography.

PROF. CUNNINGHAM exhibited fifteen models of the human head. He stated that for some months past he had been endeavouring to arrive at such data as would enable him to determine the relative degree of growth of the several lobes and convolutions of the cerebrum from infancy up to adult life. One of the first questions to be solved in approaching such an investigation was: By what standard shall we measure this growth? Shall we take the cranial sutures as our standard of reference? However suited these might be for establishing topographical relations, he considered that they would infallibly lead us astray

were we to employ them in the present case. It could easily be proved that the movement of increase of the subjacent brain did not correspond with the growth of the component bones of the skull. He quoted Féré and Topinard in support of this view, and gave two examples in which it could easily be seen—viz. (1) the frontal eminence which overlies a different portion of the frontal lobe of the brain in the adult and child; and (2) the different relations which are observed between the squamo-parietal suture and the Sylvian fissure as first noticed by Foulhouze.

The measurements must be applied to the brain itself, and for this purpose some means must be taken to preserve its volume and configuration absolutely unchanged after the cranium was opened. To this he had turned his attention, and was now able to prepare the brain so that when it was exposed *in situ* it would remain absolutely unaltered for at least 24 hours. But a further step was necessary. A more extensive comparison between the different brains was necessary than that afforded by columns of figures. It was very essential that the parts of the brain should be fixed and retained in their natural form. For this purpose he had had recourse to models which he had prepared immediately after exposure of the brain.

Two models were prepared of each head selected for investigation—viz. (a), a model of the head before it was touched; and (b) a model of the same head after it had been prepared, and the brain exposed. The brain was exposed on the right side, but narrow bars of the cranial wall were left in the lines of the cranial sutures.

The models on the table represented the head of a boy five years old, a girl of eleven years, a boy of twelve and a half years, a youth of fifteen, two middle-aged females, and two adult males.

He then briefly alluded to some of the points concerning brain growth which he had observed, but stated that until he was able to obtain specimens under five years old he did not expect to make much advance. In the antero-posterior direction very little difference was observed in the relative length of the frontal, parietal, and occipital lobes above the age of five years. What difference there was could readily be accounted for by individual peculiarities. The temporo-sphenoidal lobe, however, showed some interesting changes as age advanced from childhood to adolescence. It was placed much more horizontally in the child; in the adult its tip was turned downwards and inwards, so as to give its long axis a curved direction. Again, its vertical depth in relation to the part of the cerebrum above the Sylvian fissure diminished uniformly and steadily as adolescence and adult life was approached. In discussing whether the relative decrease of the outer surface of this lobe could have any functional significance, Prof. Cunningham referred to the recent important investigations of Prof. Schäfer upon the temporo-sphenoidal lobe. He also indicated that Dr. Symington had suspected that there

was such a decrease in the vertical dimensions of the lobe in question, and had accounted for it on mechanical grounds.

The question of cranio-cerebral topography came in as a side-issue to the present investigation. There were two distinct methods by which anatomists had determined the relation of the different parts of the brain to the surface of the head—viz., *the sutural*, which had been followed out with great exactitude by numerous investigators, and that method which, by means of certain lines and measurements made with reference to well-marked prominences, the subjacent brain could be mapped on the surface of the head. The latter plan was the one most interesting to the surgeon, and to it only he would refer. Hare, Seguin, and Reid had each developed a method of this kind. In so far as Hare's method was concerned he had nothing but commendation to say of it. It was easy of application, and as exact as any such plan could reasonably be expected to be. Reid's method was in some measure a modification of Seguin's, and in so far as the fissure of Rolando was concerned, he had found it most unreliable. In none of his specimens did this fissure coincide with Mr. Reid's lines, and in one model on the table it would be seen that even a trephine with a diameter of two inches would have failed to expose the upper end of the Rolandic fissure had it been applied according to Mr. Reid's rules. It was a method, further, which, although easy of application to a drawing of a head upon paper, was exceedingly difficult of application when the living head was concerned.

On the models of the entire heads it would be seen that the sutures and fissures of the brain, as exposed in the prepared specimens, were depicted.

The PRESIDENT said Professor Cunningham's communication was of great practical utility, especially as it appeared that Reid's method was the one that was regularly taught in many schools and studied by a large number of students. Now that cerebral surgery was beginning to make remarkable strides, the localisation of the different portions of the brain in relation to the outside became of more and more importance, and therefore the confirmation of the results obtained by Hare was of corresponding importance. Hare's method differed from Professor Cunningham's as consisting in removing pieces of bone from the whole side of the skull, while Professor Cunningham left bridges of bone along the line of the suture. In another respect also their methods differed. Hare used no special hardening method, while Professor Cunningham hardened the brain *in situ* with absolutely no shrinking, so that when the skull-cap was removed the cerebral convolutions were seen tightly applied to the dura mater. At the same time, the results showed remarkable uniformity. Hare was of opinion that the hardening tended more or less to displace the brain and make it shrink. He was also averse to freezing the brain, because, when the brain was frozen, unless special means

were taken, it was inclined to thaw and become more diffuent than ever. What he relied upon was to get the subjects as fresh as possible. He examined them thirty hours after death.

MR. THOMSON considered it was extremely important to have from Professor Cunningham's beautiful series of casts corroboration of Hare's measurements, especially as the ordinary surgeon must rely upon the investigations of skilled anatomists. Professor Cunningham was pre-eminently entitled to speak with authority, and therefore it was of the greatest advantage to have such landmarks as would lead to more successes in brain surgery. It was also of interest that they had now, it seemed, on Prof. Schäfer's authority, to regard as exceedingly doubtful what had hitherto been looked upon as the centre of hearing.

THE REV. DR. HAUGHTON said Professor Cunningham's interesting paper presented two aspects—one, that of pure geometrical anatomy in determining whether, at different ages, the fissures or convolutions of the brain inside were to be measured by external measurements; and secondly, the scientific bearing of such anatomical researches upon the practical question of the possibility of surgical operations being performed on the brain at different ages. The first aspect would be discussed on the 16th inst. at a meeting of the Royal Irish Academy, of which he was President.

MR. FOR said Magendie had pointed out the important fact of the extremely rapid growth of bone about the seventh year. It was through overlooking this that Reid took the external prominence as the basal line of his measurements, while Broca indicated by linear measurements and actual marking on the brain, the method more recently followed by Hare. For the study of brain surgery they were indebted most to the French anatomists. The specimens exhibited by Professor Cunningham, he had no doubt, marked an epoch for accuracy in brain surgery.

SIR WILLIAM STOKES said it was a matter of great concern to surgeons that the two highest authorities on brain localisation differed in reference to the situation of certain functions—namely, of tactile sensibility, hearing, and taste—which Ferrier placed in the temporo-sphenoidal lobe, while Schäfer held that none of them were there. He therefore asked Professor Cunningham to state the reasons of Professor Schäfer's view. As tending to corroborate that view, it was noteworthy that they had on record the fact that an abscess had been found *post mortem* in the temporo-sphenoidal lobe without having given rise during life to any symptom whatever that would suggest those functions.

DR. C. J. NIXON did not think too much importance could be attached to exact information as to the anatomical position of the convolutions. But they ought to be careful in accepting the view of Professor Schäfer with regard to the functions of so large an area of the brain as the temporo-sphenoidal lobe, or else they must be driven to regard the

localisation of the functions of sight and speech as likewise uncertain, or eventually, if Schäfer continued his investigations, that the brain ought to be done away with altogether. They could not attach importance to Professor Schäfer's views, considering the work done and the evidence collected by men like Bastian, Ross, Gower, Charcot, and Ferrier.

MR. SWANZY said it would seem the localisation of the functions of the brain was still in a very unsettled state. Two years ago, at a meeting of the Naturalist Society in Berlin, two professors showed dogs on which they made experiments. Professor Munck localised the centre of sight in the occipital lobe. Professor Goss did not. The former showed a dog from which he removed the occipital lobe and the dog was stone blind, while the latter showed a dog from which he removed the frontal lobe and the dog was stone blind; and also a dog from which he removed the occipital lobe and the dog was not blind. Therefore they should be careful in accepting the views of anyone.

DR. BENNETT said a disciple of Ferrier had, some years ago, a patient whom he presented as having mono-crural paralysis, and the site of the lesion was marked on the skull with great care. Subsequently the patient came under his care, and died from repeated epileptic seizures, the cause of which he attributed to disease of the kidney—albuminuria. With the history of mono-crural paralysis he made a careful *post-mortem* examination, but failed to discover the smallest trace of any lesion of the brain or the skull connected with it. Both the skull and brain were absolutely healthy.

PROFESSOR CUNNINGHAM said the paper from which he quoted the results of Professor Schäfer's investigations would be found in the last number of *Brain*; and his experiments consisted in removing the temporo-sphenoidal lobe on each side. In each case the monkeys he operated on showed no evidence of loss of hearing, tactile sensibility, or taste. His experiments also tended rather to confirm those of Munck, in which complete removal of both occipital lobes led to total blindness.

The Sacro-iliac Joints in a Pregnant Woman.

PROFESSOR CUNNINGHAM exhibited a specimen illustrating relaxation of the sacro-iliac joints in a pregnant woman.

The PRESIDENT said the great rarity of the specimen made it all the more interesting. Though familiar with the fact that the sacro-iliac joints became relaxed, few had seen an example. He now saw one for the first time, and he was surprised at such a comparatively early stage of pregnancy to see the enormous relaxation which the ligaments presented.

DR. BENNETT said it was a pity Professor Cunningham had not gone a step further and corrected the impression growing among anatomists

that the sacro-iliac joint was a synarthrosis, as in the case of diarthrodial joints kept in position.

MR. FOX said the older writers on midwifery had observed upon the amount of relaxation in the joints.

On the Homology and Innervation of the Achselbogen and Pectoralis Quartus, and the Nature of the Lateral Cutaneous Nerve of the Thorax.

DR. AMBROSE BIRMINGHAM read a paper on the homology and innervation of the pectoralis quartus and Achselbogen, and the nature of the lateral cutaneous nerve of the thorax. There is a considerable amount of uncertainty about the homology of the Achselbogen (more commonly known as an axillary muscular arch) and the pectoralis quartus. With regard to the first, Mr. Galton considered that it was the representative of the pectoralis quartus; Mr. T. B. Perrin, that it was an aborted dorso-epitrochearis; Professor Humphrey, that it was due to the imperfect segmentation of the pectoralis major from the latissimus dorsi; and Sir William Turner, that it was panniculus.

The pectoralis quartus corresponds to Achselbogen, according to Mr. Galton; it is an imperfectly developed slip of dorso-epitrochearis, according to Mr. Wood; it is panniculus, according to Professor Humphrey; and, according to Professor Owen, it is a segmented portion of the lower border of the great pectoral. To decide between the conflicting views the author proposed to test each of them, as far as possible, by the following criterions of homology—namely, position, origin, insertion, and nerve supply. Taking up first the pectoralis quartus, Mr. Galton's view seems to be disproved by the fact that the Achselbogen and pectoralis quartus may both exist as separate and distinct muscles in the same subject. The same may be said, with regard to the second view, of the homology of the pectoralis quartus; further, tested by the criterions, dorso-epitrochearis and pectoralis quartus disagree in every one of the tests, and notably in nerve supply; the quartus is supplied by the internal anterior thoracic in man, dog, cat, sloth, bear, and macaque; the dorso-epitrochearis by the musculo-spiral. Professor Humphrey's view seems very probable, tested by position, origin, and insertion; in nerve supply there is an apparent divergence; panniculus is supplied by lateral cutaneous, but, as is shown further on, this nerve contains motor fibres, derived from the internal anterior thoracic. Professor Owens' theory presents equal claims, tested by the criterions; but several considerations, notably the condition of the panniculus and pectoralis quartus found in the cat, show that the quartus could not have been derived from the panniculus; in this animal the quartus is buried in the axillary interval, and largely under cover of the pectoralis major; the panniculus passes almost transversely across the axilla from the outer surface of latissimus to outer surface of pectoralis major, and cannot have had any possible con-

nexion with the quartus. So that Professor Owens' view seems most probable.

Next, as to the Achselbogen. Before testing the different theories, its nerve supply must be determined. Out of nine cases, its nerve comes in five directly from the internal anterior thoracic; in three, probably, indirectly from the same nerve (*viz.*, from communicating branch between external and internal thoracics, from inner cord of plexus, from Wrisberg, which arose by a common trunk with the internal thoracic); and, in one case, from the intercosto-humeral. Evidently, a branch of internal thoracic is the normal nerve supply.

The first theory, Mr. Galton's, has been disposed of under the pectoralis quartus. The second, that of Mr. Perrin, fails; tested by position, insertion, and nerve supply it agrees in origin alone. Tested by position and insertion, Professor Humphrey's theory seems probable; in origin, the Achselbogen departs slightly from what should be found if this were the true view; it does not spring from the margin of the latissimus, but is connected to its back by an aponeurotic band; the nerve supply, if Professor Humphrey were right, ought to be double, from subscapular and internal thoracic, but we have seen it is from the latter nerve alone, and this weighs decidedly against his view. The panniculus (dorso-humeral portion) agrees with Achselbogen in position and insertion; in origin, too, the two agree, the change from panniculus passing freely over latissimus to panniculus adherent to its margin, as in the Achselbogen, may be traced from the rabbit through the cat, slightly adherent; the chimpanzee, more closely united; the phalangista vulpina to the womb, at where the two are most intimately blended. Several other considerations show that the panniculus can bear to the latissimus the relations borne to it by the Achselbogen. In nerve supply the panniculus and Achselbogen seem to disagree, the panniculus being supplied by the lateral cutaneous nerve of the thorax, which, according to Mr. Paterson, is the homologue of the nerve of Wrisberg. But an examination of the nerve in a series of animals leaves no doubt that the nerve in question is compound, containing within it the nerve of Wrisberg and a part or, sometimes, the whole of the internal anterior thoracic. And Professor Sir William Turner's theory, that Achselbogen is panniculus, seems most probable.

The points sought to be established in this paper are—

- 1st. That pectoralis quartus is a segmented portion of great pectoral.
- 2nd. That Achselbogen is a derivative of panniculus.
- 3rd. That pectoralis quartus is supplied by internal anterior thoracic.
- 4th. That Achselbogen is supplied by internal thoracic; and
- 5th. That the lateral cutaneous nerve of the thorax is the nerve of Wrisberg, associated with more or less of the internal thoracic.

The PRESIDENT said he had hitherto held a different view of the

morphology of the muscle, regarding it from the nerve supply as a muscle belonging to the pectoral group. Taking, as a starting point, the pectoralis quartus, it was connected in its origin with the pectoralis major, and, passing across to be inserted in some part of the arm, it was sometimes found wandering down the arm reaching the condyle. It might be conceived as possible from that view that the pectoralis quartus and the Achselbogen were the same muscle. This, however, was formed only from observation in the human subject. Therefore Dr. Birmingham's observations extending to the lower animals were of great weight. With regard to the origin of the nerve from the internal anterior thoracic, or the nerve of Wrisberg, he did not think there was any fundamental difference in the nerve supply; because nerves in the plexus very frequently adhered for a portion of their length so as to appear to be part of it. The branch coming from the intercosto-humeral presented a difficulty which could be overcome, because the second dorsal nerve gave a branch to the lower trunk of the brachial plexus. A nerve might be shifted in its attachment up or down. For instance, a branch of the fifth might, in some cases, come off from the fourth, and so have shifted its attachment a point up. So he did not think any great weight could be laid to a case in which the intercostal humeral nerve supplied the Achselbogen. That would not disassociate it from the pectoral group. But the great weight of evidence was, that the Achselbogen was supplied by the internal anterior thoracic, and, therefore, it was referred to the pectoral group.

PROFESSOR CUNNINGHAM said Dr. Birmingham's paper was well reasoned out, and showed most careful and elaborate investigation, and indeed might be looked upon as really the first serious attempt to determine the true homologies of the Achselbogen and the pectoralis quartus. There were few anatomists who had not dabbled in the same field. He had done so himself, but his attempts to arrive at the proper homologies of those muscles were merely *en passant*. From what Dr. Birmingham had stated his investigations went to show that he had arrived at the proper conclusion.

DR. BIRMINGHAM replied. He said he saw that Professor Cunningham's opinion was merely a passing one, without having worked out the homology. Wilson had referred to the Achselbogen as being supplied by the intercostal humeral; that it might be so and still receive from that trunk fibres which should come from the internal thoracic. But in his opinion such a thing could not occur. The internal anterior thoracic never received fibres from a cord lower down than the 9th cervical.

The History of the Nerve to the Anconeus.

The PRESIDENT read a short paper on the above subject. The history of the nerve involved the morphology of the muscle. The anconeus was

usually regarded as a part of the triceps which had wandered downwards from the olecranon process to a more distal point on the forearm. For this view of its morphology two reasons were assigned: (1) continuity with the lower fibres of the triceps; and (2) nerve-supply. The author had found in a lizard (*Hatteria*) that the anconeus was separate from the triceps, but formed an integral part of the extensor carpi ulnaris; he found also that the "nerve to the anconeus" supplied other muscles as well (*e.g.*, supinator brevis), and then joined the posterior interosseus nerve to take part in the innervation of the extensors of the digits. In the alligator he found the extensor carpi ulnaris absent, its place being taken by a large anconeus with a double nerve-supply (from "nerve to anconeus" and posterior interosseus). In man he had found a similar double supply for the anconeus in two out of four subjects he had examined; this arrangement had been described by Luschka.

The author concluded—(1) That the anconeus was to be regarded more as a part of the extensor carpi ulnaris than of the triceps; (2) That the "nerve to the anconeus" originally took a large share in the innervation of the muscles on the extensor aspect of the forearm.

PROFESSOR CUNNINGHAM said the point dealt with by Dr. Brooks was extremely interesting, as revolutionising their ideas of the nerve to the anconeus. They had hitherto looked upon it as their chief proof of false homology of the anconeus muscle. Now they regarded it as a nerve driven away from the forearm, with only one hold on the forearm.

The Section adjourned.

SECTION OF SURGERY.

President—A. H. CORLEY, M.D., President of the Royal College of Surgeons, Ireland.

Sectional Secretary—MR. W. THORNLEY STOKER.

Friday, May 11, 1888.

The PRESIDENT in the Chair.

Case of Punctured Wound of the Peritoneum, with Protrusion of the Intestine; Recovery after Operation.

MR. T. DONNELLY read a paper on a case of wound of the abdomen, with protrusion of the intestine. [It will be found at page 102.]

MR. N. FALKNER testified to the practical utility of Mr. Donnelly's paper as a guide to the young surgeon in the emergency described.

DR. FRASER mentioned the case of a boy, aged seven, who, while amusing himself jumping over pointed sticks, became spiked behind the

upper part of the testicle, sustaining a severe wound. An abscess formed, and in a few days out came a piece of the boy's breeches. He (Dr. Fraser) thoroughly believed in the benefit of opium in abdominal attacks, but small doses were of little use.

DR. A. W. FOOT also expressed himself in favour of the opium treatment, and related a case in which a wild cow gored a man, ripping open his abdomen. The intestines protruded, and, without help, the man struggled home, treading on his own intestines. The doctor described how he sponged the intestines to remove chopped straw, bits of hay, leaves and dirt, and then put them back and stitched up the wound. Imbued with the teaching of Graves and Stokes as to the value of opium in accidents setting up inflammatory conditions of the abdominal organs, the doctor kept the patient under the influence of opium as much as possible, with due regard to life, and he made a good recovery.

MR. MOLONY referred to a case in his own practice in which a man sustained eighteen or nineteen wounds of the body, abdomen, penis, legs and arms in a fight with another man, who slashed him with a butcher's knife. Although the man did not tread on his intestines, they protruded and were covered with dirt. He washed the intestines carefully, put them back, the wounds requiring 46 or 56 stitches. Having treated him freely with opium, he recovered in four weeks without inflammatory symptoms beyond slight tympanites.

The PRESIDENT considered that large doses of opium were best.

MR. DONNELLY, in reply, said the small doses of opium were given, having regard to the age of the child, while he held his hand ready to increase the dose if required; but the necessity did not arise, and he had been taught that he ought to act cautiously in administering opium.

Enterectomy and Enterorrhaphy.

MR. M'ARDLE read a paper on enterectomy and enterorrhaphy. After discussion, the Section adjourned.

PERIOSTEUM GRAFTING.

DR. C. W. TRUEHEART, of Glaveston, Texas, whose good surgery in the Confederate Hospitals in Richmond is well known, reports a case of periosteum grafting in the case of a clavicle, shattered by the accidental discharge of the patient's shot gun. The grafts were taken from the superficial portion of the long bones of the legs, and the scapula of a dog, with the result that two and three-fourths inches of the clavicle was reproduced. The operation was performed in 1876, and the bone still continues to act as the normal clavicle of the opposite (right) side.—*The Medical Herald*, from the *Medical Review*.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1887-88.

President—ROBERT ESLER, M.D.

Hon. Secretary—JOHN M'CRAW, M.D.

Biographical Sketch of the Late Dr. Henry MacCormac. By Dr. BURDEN.

BORN at the beginning of the century, Dr. MacCormac having in course of time completed his preliminary studies, graduated in medicine at Edinburgh in the year 1824. Soon afterwards he proceeded on extensive foreign travel. To Africa he in the first place directed his course. After visiting the Cape of Good Hope he journeyed by land to Sierra Leone and thus availed himself of an opportunity, at that time rarely enjoyed, for becoming acquainted with the native tribes, the natural history, the climate and the resources of the western shores of that vast Continent. Having escaped various perils incident to such a venturesome undertaking he nevertheless fell a victim to a bad attack of "jungle fever," to which he very nearly succumbed. He next crossed the Atlantic and completed an extensive tour through North America. Nor was he satisfied with one visit, for shortly afterwards the great western Continent again saw him a wayfarer on its fertile soil. When we consider that his voyages were performed in sailing ships we can more fully realise the ardour of his zeal for the acquisition of the kind of knowledge which can be obtained only by personal exploration of distant countries. Having returned from his second trip to North America he commenced practice as a physician in Belfast, where his extensive scientific attainments were speedily recognised, as evidenced by his appointment to the office of physician to the Royal Hospital, then called the Belfast Fever Hospital. In the year 1832 Asiatic cholera for the first time visited Belfast. During this period of peril and widespread panic to Dr. MacCormac was committed the charge of the Cholera Hospital, a proof of the confidence reposed by his townsmen in the skill and knowledge of a young man only thirty-two years old. Not only did he render essential service to his own town by his successful treatment of this disease but he also superintended the training of young practitioners for the performance of similar duties in neighbouring towns. A feeling of security and the saving of many lives were the natural results. His fellow-citizens showed how highly they appreciated the part he played at this critical time by presenting him with a handsome testimonial.

On being appointed visiting physician to the District Lunatic Asylum he inaugurated a mode of treatment which was soon followed by a marked improvement in the physical and moral condition of the inmates. This happy result he obtained chiefly by insisting on active efforts to improve the enfeebled mind, contrasted with the mere passive or doing nothing treatment, and a more generous dietary, knowing, as he did, that debility tends to perpetuate the evil in every phase of mental disorder. As evidence of his watchful care of the inmates it is worthy of note that while, during an epidemic of cholera, death from that disease was but too frequent in other institutions no cholera patient died in the Belfast Lunatic Asylum. This he himself largely attributed to the prophylactic influence of daily doses of dilute sulphuric acid. Dr. MacCormac, during several years of his active professional life, was Professor of the Theory and Practice of Medicine in the Royal Academical Institution, where his sound teaching was much appreciated and is still remembered by several of his old pupils who survive him. He likewise became by election a corresponding member of the National Institution of Washington and the Belgian Academy.

Although enjoying for many years an extensive and lucrative practice, much of which consisted in consultation work, he became more and more absorbed in literary and scientific study. Indeed, for some twenty years before his death he had almost relinquished the active exercise of his profession and began to devote himself to the writing and publication of numerous works on medical, scientific, and philanthropic subjects, many of which have been translated into various foreign languages. The subjects upon which he most frequently and impressively dwelt were consumption, its nature, causes, prophylaxis, and cure, and in endeavouring to promote the universal adoption of the well-known doctrines and modes of treatment which he had in this connection originated he spared no effort and lost no opportunity. Though doomed to encounter much violent opposition yet, on the other hand, it was his good fortune to learn from time to time that his persevering efforts had succeeded in procuring for him the recognition and adoption of his views by many eminent British and foreign authorities. On these occasions he experienced the keenest gratification, and hopefully anticipated the general acceptance of the tenets he had so stoutly upheld during the best part of his lifetime.

In his treatment of disease Dr. MacCormac relied greatly on the beneficial effects of an abundance of pure air in the sick room. He was an ardent advocate both by precept and in practice of active physical exercise, which he justly deemed an effective means of preserving health. His knowledge, as has already been stated, was by no means confined within the limits of strictly professional matters, for although his contributions to medical literature are voluminous and valuable yet his

fame rests in no minor degree upon a varied production of purely literary and scientific work. He consequently gained the esteem and respect of a wide circle of contemporary authors and savants, with whom he kept up regular correspondence. Among the books which his indefatigable energy produced were—"A Treatise on Stammering," "The Philosophy of Human Nature," "Methodus Medendi or the Præceti of Medicine," "A Work on Fever," "A Translation of Antoninus," "Aspirations from the inner—the Spiritual Life," "Metanoia—a Plea for the Insane," "The Nature and Treatment of Asiatic Cholera," "Proposal for the Painless Extinction of Life in Animals Designed for Human Food," "Consumption as Engendered by Pre-breathed Air," "The Conversations of a Soul with God," "The Prophylaxis and Arrest of English and Asiatic Cholera by Dilute Acids and especially by Dilute Sulphuric Acid," "The Open Air Treatment of Fever and Consumption," &c.

Dr. MacCormac was deeply versed in classical and foreign literature, and a Mithridates in respect of alien tongues, possessing as he did a knowledge of at least twenty languages. The versatility of his talents is illustrated by the fact that at the time of his death he was engaged in preparing for the press a profound work on "philology," while at the same time he was getting ready for publication an exhaustive treatise on "insanity." In disposition our departed friend was exceedingly kind and benevolent, and a love of children was a prominent feature in his character. It was not at all an unusual thing to see him when taking his daily walk to the Lunatic asylum the centre of a group of eager youngsters and distributing to them pocketfuls of good things that he had purchased for them on his way. Socially he was a delightful companion and most accomplished conversationalist. His scientific mind and vast store of information rendered his company most acceptable in all cultured society, while his broad sympathies and kindly nature gained for him an extensive circle of friends. His benevolence and humanity extended further than mankind alone, as indicated by his efforts to devise a plan which would prevent the infliction of pain during the process of killing animals necessary for human food. His son, Sir William MacCormac, is one of the many men who in the present generation have done credit to Belfast as the place of their training and education. His brilliant career in a large degree reflects that of his father, and demonstrates that the teaching of the latter has not been without its influence in the broadest spheres of medical activity. Sir William MacCormac's genius has received ample recognition not alone in the United Kingdom but in all the chief centres of medical science in Europe. The following remarks from the gifted pen of his son form a fitting conclusion to the foregoing brief and imperfect sketch of Dr. MacCormac's life :—

"Very often indeed I have heard my father assert the identity of

phthisis in the lungs with 'white swelling' of the joints, and the so-called strumous lymphatic glands. This was a really wonderful prevision of what the most recent minute pathological investigation has proved to be absolutely true. The tubercle bacillus, the giant cell; all the characteristic appearances of miliary and caseating tubercle have been demonstrated alike in all. When it was advanced by my father that 'white swelling,' and consumption, properly so called, were one and the same thing it was scouted as absurd, now it is admittedly true. Then again his urgent plea for the active as opposed to the passive treatment of insanity should be recognised. This plan is, I see, gaining in favour, and, in other words, a wider recognition of the fact has taken place that many cases of insanity depend on functional rather than organic causes, and should be treated accordingly. He was a man highly endowed with the scientific imagination—a rare quality, and one which all great innovators and discoverers must needs possess. He had the truest sympathy for suffering in all its forms, mental and physical, and a love and sympathy for children, which reveals the whole loving character of the man. They flocked around him, and had no need to be invited. He had the rare gift of sympathy with the work, the struggles, the success, the failure, as it might be, of those around, and for each and all he had a word of kindly encouragement or of solace. In a capacity for concentrated work few could surpass him. He would rise at four or five of a winter morning, light a bit of fire, or sit down to work without one, and continue without a break for four or five hours. His powers of physical endurance, his age regarded, were not less remarkable. He could and did brave all weathers, and was able to take long walks. I can think of no more trying task on the endurance of a man long past his three score years and ten than a daily visit on foot to the Lunatic Asylum, nearly two miles away. This he accomplished without fail in all weathers on foot. Nothing could exceed the tender-hearted affection he possessed for his children, his grandchildren, and all that belonged to them. He was a deeply religious man, who believed in God and God's goodness to his creatures. He was trammelled by no creed, but his religion was none the less deep or sincere because it did not acknowledge the restrictions of any sect. He lived a good life; may we endeavour live as good a one."

Biographical Sketch of the late Dr. Thomas Henry Purdon. By RICHARD ROSS, M.D.

DR. THOMAS HENRY PURDON was son of Dr. Henry Purdon, of 5 Wellington-place, Belfast, and brother of the late Dr. C. D. Purdon. His father was one of the four Staff-Surgeons of Ireland, and was a leading physician of Down and Antrim. He died in 1843, aged 74 years. The family came originally from Cumberland and settled in Westmeath, in Queen Elizabeth's time. This family became allied with the Crom-

melins, and also with the De La Cherois—Huguenot families who settled in the neighbourhood of Lisburn.

Dr. T. H. Purdon was born in Chichester-street, Belfast, in 1806. He received his early education in the Royal School, Armagh, and at the age of thirteen entered Trinity College, Dublin, where, in due course, he graduated M.A., M.B. At twenty-one years of age he was accounted worthy of the high honour of the Fellowship of the Royal College of Surgeons, Ireland. He commenced the practice of his profession in Belfast, where he soon made many friends. He was one of the Surgeons to the General Hospital, and was one of the first to establish a dispensary for the poor of Belfast. In 1832 he was actively employed in the treatment of Asiatic cholera, which was then epidemic, and was among the early and successful operators for laryngeal obstruction. Some time ago a tracheotomy tube was exhibited at this Society which Dr. Purdon had inserted forty-five years previously.

The love of books which distinguished him in youth was, in after life, exemplified in his large and carefully selected library, which had been well studied, as attested by the neat, almost microscopical, marginal annotations, which are to be found throughout so many volumes.

Dr. Purdon took little interest in political matters, and, beyond being for some years a member of the Belfast Town Council, was not much identified with municipal affairs.

His scientific apparatus bear evidence to the practical bent of his character.

Dr. Purdon was a most liberal-minded and charitable man; his generosity seemed to know no bounds. He was one of the largest contributors to the Medical Benevolent Fund Society of Ireland, and was permanent President of the Belfast Branch up till the time of his death. Few charitable objects appealed to him in vain. His purse was open to the needy and distressed at all times. He was esteemed and loved by his patients and ever popular with his professional brethren.

Dr. Purdon was a Christian gentleman. He was a sincere member of the Church of Ireland, in which he had been ordained a lay reader.

All through life he was a man without guile.

He was the first President of the Clinical and Pathological Society in 1853. His portrait, which is now presented to this Society by his widow, is a faithful likeness.

He died on August 6th, 1886, and was interred in the family burying ground in old Lisnagarvey.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.;
F. R. Met. Soc.; Diplomat in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, June 16, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	May 26.	June 2.	June 9.	June 16.		May 26.	June 2.	June 9.	June 16.
Armagh -	10·3	5·2	25·8	15·5	Limerick -	27·0	21·6	27·0	32·4
Belfast -	23·9	21·6	29·2	24·1	Lisburn -	14·5	19·3	43·5	9·7
Cork -	24·0	21·4	16·9	19·5	Londonderry	19·6	16·0	32·1	12·5
Drogheda	42·3	12·7	25·4	8·5	Lurgan -	35·9	30·8	25·7	20·5
Dublin -	23·3	23·2	21·3	24·4	Newry -	10·5	21·1	28·1	14·0
Dundalk -	17·5	17·5	26·2	4·4	Sligo -	4·8	9·6	28·9	9·6
Galway -	3·4	6·7	83·6	20·2	Waterford -	30·1	20·8	23·2	25·5
Kilkenny	29·6	12·7	8·5	33·8	Wexford -	34·2	47·0	17·1	8·6

In the week ending Saturday, May 26, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 16·6), was equal to an average annual death-rate of 17·8 per 1,000 persons living. In Glasgow the rate was 25·4; and in Edinburgh it was 17·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 23·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in Galway, Newry, Dundalk, Sligo, and Armagh to 15·4 in Lurgan. The 7 deaths from all causes registered in the last-named district comprise 2 from measles and 1 from diarrhoea. Among the 104 deaths from all causes registered in Belfast are 4 from measles (being 2 under the

number from that disease in the preceding week), 2 from whooping-cough, and 1 from diphtheria. The 11 deaths in Londonderry comprise 2 from typhus, and the 13 deaths in Waterford comprise 2 from diphtheria.

In the Dublin Registration District the births registered during the week amounted to 159—86 boys and 73 girls—and the deaths to 165—83 males and 82 females.

The deaths represent an annual rate of mortality of 24·4 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 23·3 per 1,000.

Twenty-four deaths from zymotic diseases were registered, being 2 under the average for the corresponding week of the last ten years, and also 2 under the number for the week ended May 19. They comprise 2 from measles, 5 from scarlet fever (scarlatina), 7 from whooping-cough, 1 from enteric fever, 2 from diarrhoea, &c.

Only 3 cases of scarlatina were admitted to hospital, being 6 under the admissions for the preceding week, and 14 under those for the week ended May 12; 10 scarlatina patients were discharged during the week, one died, and 54 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week.

No cases of typhus and only 3 of enteric fever were admitted to hospital. In the preceding week 9 cases of the former and 5 of the latter disease had been admitted. Eleven cases of typhus and 14 of enteric fever remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 27, being 8 under the average for the corresponding week of the last ten years, and 6 under the number for the week ended May 19. The 27 deaths comprise 11 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, June 2, the mortality in twenty-eight large English towns, including London (in which the rate was 16·1), was equal to an average annual death-rate of 17·6 per 1,000 persons living. In Glasgow the rate was 22·2; and in Edinburgh it was 18·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in nine of the districts to 25·7 in Waterford, the 9 deaths from all causes registered in that district comprising 1 from whooping-cough and 1 from diarrhoea. Among the 94 deaths from all causes registered in Belfast are 2 from measles, 1 from scarlatina, 1 from diphtheria, and 4 from diarrhoea; and the 16 deaths in Limerick comprise 2 from scarlatina.

In the Dublin Registration District the births registered during the week amounted to 226—110 boys and 116 girls—and the deaths to 159—73 males and 86 females.

The deaths represent an annual rate of mortality of 23·5 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 23·2 per 1,000.

The number of deaths from zymotic diseases registered is 23, being 5 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended May 26. The 23 deaths from these diseases comprise 1 from chicken-pox, 1 from measles, 5 from scarlet fever (scarlatina), 9 from whooping-cough, 1 from ill-defined fever, 3 from enteric fever, 2 from diarrhoea, &c.

Five cases of scarlatina were admitted to hospital, being 2 in excess of the admissions for the preceding week, but 4 under the number for the week ended May 19. Fifteen scarlatina patients were discharged, and 44 remained under treatment on Saturday, being 10 under the number in hospital at the end of the previous week.

Three cases of typhus and 4 of enteric fever were admitted. The admissions for the preceding week comprised 3 cases of enteric fever, but none of typhus. Fourteen cases of typhus and 16 of enteric fever remained under treatment in hospital on Saturday.

Thirty-one deaths from diseases of the respiratory system were registered, being 4 over the number for the preceding week, but 2 under the average for the twenty-second week of the last ten years. They comprise 13 from bronchitis, 9 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, June 9, the mortality in twenty-eight large English towns, including London (in which the rate was 14·9) was equal to an average annual death-rate of 16·2 per 1,000 persons living. In Glasgow the rate was 20·8; and in Edinburgh it was 17·6.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 24·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in Galway, Kilkenny, Drogheda, Wexford, Sligo, Lurgan, and Armagh, to 13·1 in Dundalk. The 6 deaths from all causes registered in the last-named district comprise 1 from typhus and 2 from whooping-cough. The Registrar for the district remarks: "We have at present an epidemic of whooping-cough which is becoming very prevalent." Among the 127 deaths from all causes registered in Belfast are 7 from

measles (being 5 over the number from that disease in the preceding week), 3 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, and 2 from diarrhoea. The 26 deaths in Cork comprise 3 from typhus and 1 from diphtheria.

In the Dublin Registration District the births registered during the week amounted to 172—78 boys and 94 girls—and the deaths to 147—73 males and 74 females.

The deaths represent an annual rate of mortality of 21·7 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 21·3 per 1,000.

Twenty-three deaths from zymotic diseases were registered, being equal to the number for the preceding week, but 9 under the average for the twenty-third week of the last ten years. They comprise 1 from measles, 3 from scarlet fever (scarlatina), 11 from whooping-cough (being 2 over the number from that disease in the preceding week), 3 from enteric fever, 1 from dysentery, &c.

Seven cases of scarlatina were admitted to hospital, being 2 over the admissions for the preceding week; 6 scarlatina patients were discharged, and 45 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, June 2.

The admissions for the week also include 4 cases of enteric fever and 1 of small-pox, but no cases of typhus were admitted. The case of small-pox referred to is the only case of that disease admitted to hospital since the week ended April 21. Ten cases of typhus and 18 of enteric fever remained under treatment in hospital on Saturday, June 9.

Deaths from diseases of the respiratory system, which had risen from 27 in the week ended May 26 to 31 in the following week, fell this week to 25, or 11 below the average for the corresponding week of the last ten years. The 25 deaths comprise 13 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, June 16, the mortality in twenty-eight large English towns, including London (in which the rate was 14·2), was equal to an average annual death rate of 16·2 per 1,000 persons living. In Glasgow the rate was 23·9; and in Edinburgh it was 19·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in Londonderry, Drogheda, Wexford, Dundalk, Sligo, and Lisburn, to 8·5 in Kilkenny—the 8 deaths from all causes registered in the last-named district comprising 1 from typhus and 1 from diarrhoea. Among

the 105 deaths from all causes registered in Belfast are 1 from measles (being 6 under the number from that disease in the preceding week), 2 from whooping-cough, 2 from diphtheria, 1 from simple-continued fever, and 1 from diarrhoea. The 30 deaths in Cork comprise 1 each from measles, enteric fever, and diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 185—82 boys and 103 girls—and the deaths to 167—76 males and 91 females.

The deaths represent an annual rate of mortality of 24·7 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 24·4 per 1,000.

The number of deaths from zymotic diseases registered is 22, being 4 below the average for the corresponding week and 1 under the number for the week ended June 9. The 22 deaths comprise 4 from scarlet fever (scarlatina), 5 from whooping-cough, 2 from enteric fever, 3 from diarrhoea, 1 from erysipelas, &c.

Seven cases of scarlatina were admitted to hospital, being equal to the admissions for the preceding week. Ten scarlatina patients were discharged, one died, and 41 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, June 9.

Nine cases of typhus and 3 of enteric fever were admitted—the admissions for the preceding week comprised 4 cases of enteric fever but none of typhus. Twelve cases of typhus and 19 of enteric fever remained under treatment in hospital on Saturday, June 16.

Twenty-eight deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, but 4 under the average for the twenty-fourth week of the last ten years. They consist of 13 from bronchitis, 9 from pneumonia or inflammation of the lungs, 4 from pleurisy, and 2 from croup.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of June, 1888.

Mean Height of Barometer,	-	-	-	29·935 inches.
Maximal Height of Barometer (on 18th, at 9 p.m.),				30·300 „
Minimal Height of Barometer (on 12th, at 9 a.m.),				29·443 „
Mean Dry-bulb Temperature,	-	-	-	56·1°.
Mean Wet-bulb Temperature,	-	-	-	52·9°.
Mean Dew-point Temperature,	-	-	-	50·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·363 inch.
Mean Humidity, - - - - -	-	-	-	80·7 per cent.
Highest Temperature in Shade (on 26th), - - -	-			72·4°.

Lowest Temperature in Shade (on 14th),	-	-	43.2°.
Lowest Temperature on Grass (Radiation) (on 14th),			36.9°.
Mean Amount of Cloud,	-	-	66.0 per cent.
Rainfall (on 18 days),	-	-	3.045 inches.
Greatest Daily Rainfall (on 27th),	-	-	.951 inch.
General Directions of Wind,	-	-	N.E., E., N.

Remarks.

This month shows a marked contrast to June, 1887, which will be long remembered as one of the driest and warmest months on record in Dublin. The mean temperature fell 6.1° short of that of June, 1887; the mean height of the barometer was .278 inch lower; and more than ten times as much rain fell, on 18 as compared with 5 days. The only meteorological factor which corresponded in the two years was the direction of the wind. In the past month; as in June, 1887, there was a singular preponderance of polar (N., N.E., and E.) winds. Were it not for a bright period in the third week, the month would have been a singularly cheerless one.

In Dublin the mean temperature (56.2°) was decidedly below the average (57.8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 56.1°. In the twenty-three years ending with 1887, June was coldest in 1882 (M. T. = 55.8°), and in 1879 (the "cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°), in 1865 (M. T. = 61.0°), and in 1868 (the "warm year") (M. T. = 60.5°). In 1886, the M. T. was 57.5°.

The mean height of the barometer was 29.935 inches, or a shade (.011 inch) above the average value for June—namely, 29.924 inches. The mercury marked 30.300 inches at 9 p.m. of the 18th, and fell to 29.443 inches at 9 a.m. of the 12th. The observed range of atmospheric pressure was, therefore, .857 inch—that is, a little less than nine-tenths of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 56.1°, or 3.7° above the value for May, 1888; that calculated by Kaemtz's formula—viz., $\text{min.} + (\text{max.} - \text{min.} \times .41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 55.1°, or 1.5° below the average mean temperature for June, calculated in the same way, in the twenty years, 1865–84, inclusive (56.6°). The arithmetical mean of the maximal and minimal readings was 56.2°, compared with a twenty-three years' average of 57.8°. On the 26th the thermometer in the screen rose to 72.4°—wind S.S.E.; on the 14th the temperature fell to 43.2°—wind N.W. The minimum on the grass was 36.9° on the latter date. The rainfall was as much as 3.045 inches, distributed over 18 days. The average rainfall for June in the twenty-three years, 1865–87, inclusive, was 1.839 inches, and the average number of rainy days was

14·0. The rainfall and the rainy days, therefore, were decidedly above the average. In 1878 the rainfall in June was very large—5·058 inches on 19 days; in 1879 also 4·046 inches fell on 24 days. On the other hand, in 1874, only ·405 of an inch was measured on 9 days, and in 1868 only ·677 of an inch fell on but 6 days. In 1887, the rainfall was only ·252 of an inch, distributed over only 5 days.

There was a solar halo on the 20th. The atmosphere was foggy on the 2nd. High winds were noted on 5 days, but did not attain the force of a gale on any occasion. Temperature reached or exceeded 70° in the screen on only *one* day, as compared with 17 days in 1887. Luminous cirri were seen from Dublin on the northern horizon on the nights of the 15th and 26th. There was a thunderstorm on the evening of the 2nd, and heavy thunder showers occurred on the 12th and 13th.

The first two days of the month were chiefly dull and very cold for the time of year. On the afternoon of Saturday, June 2, however, temperature rose quickly, and in the evening a thunderstorm occurred.

The week ended Saturday, the 9th, may be described as a dull, cold, rainy period. On Sunday, a thunderstorm depression was passing away to the northward, and a cloudy forenoon was followed by a fine warm afternoon. During the remainder of the week Ireland was under the influence of an irregular depression, which advanced slowly from the Peninsula and the Bay of Biscay. It caused frequent and heavy rains, and squally southerly (S.E. to S.W.) winds. On Friday the wind shifted to the northward in the extreme west of Ireland, and the change spread slowly thence over the whole country, but without much improvement in the weather, which remained broken to the end of the week. In Dublin the mean height of the barometer was 29·827 inches—pressure was greatest, 30·149 inches, at 9 p.m. of Monday; least, 29·541 inches, at 9 a.m. of Friday. The mean dry bulb temperature, from observations taken daily, at 9 a.m. and 9 p.m., was 53·5°. On Sunday the thermometers in the screen rose to 66·7°; on Wednesday they fell to 45·8°. Rain fell on six days to the amount of 1·184 inches—of this quantity ·565 of an inch was measured on Tuesday. On Sunday, the distribution of temperature in Great Britain was remarkable—in the S.E. of England the thermometer rose to 82° or 84°; at Stornoway and Aberdeen it did not exceed 40°, and heavy snow fell in central Scotland. In Paris, on this day, a maximum of 94° F. was reported.

In the period from the 10th to the 16th inclusive, cool, changeable weather again prevailed. It was fine at the beginning and end of the week, but on Monday and the two following days rain or thunder-showers occurred, and again early on Friday morning there was a considerable fall of rain. Thunder was heard in different directions on the afternoons of Tuesday and Wednesday, and heavy showers fell in places. Late on Friday evening the sky cleared quickly, and luminous cirriform

clouds were seen at 11 p.m. on the northern horizon. This phenomenon seems to be peculiar to the northern twilight of June and July. In Dublin the mean height of the barometer was 29·872 inches—pressure was greatest, 30·118 inches, at 9 p.m. of Saturday; least, 29·443 inches, at 9 a.m. of Tuesday. The mean dry bulb temperature, from observations taken daily at 9 a.m. and 9 p.m., was 55·6°. On Friday the thermometers in the screen rose to 65·8°; on Thursday they fell to 43·2°. Rain fell on four days to the amount of ·464 of an inch—of this quantity, ·210 of an inch was measured on Thursday. A decided north-easterly current prevailed at the end of the week.

During the week ended Saturday, the 23rd, the weather, which was chiefly fine, dry, and bright in Scotland and Ireland, was for the most part unsettled, dull, cold, and showery, with thunderstorms, in England, Germany, and France. Throughout, a north-easterly (E. to N.) wind prevailed in Ireland, and until Wednesday only a few specks of cloud were seen in Dublin, whereas in London during the same time a dense cloud-canopy shut out the sun's rays so completely that temperature never rose above 55°. On Wednesday afternoon the sky towards E. assumed an unsettled appearance, and in the evening showers fell. At 8 a.m. on Thursday also there was heavy rain for a while. Two hazy, dull days followed, but Saturday was brilliant and warm. In Dublin the mean atmospheric pressure was 30·198 inches—the barometer ranging only from 30·300 inches at 9 p.m. of Monday to 30·086 inches at 9 p.m. of Wednesday. The mean dry bulb temperature, deduced from observations taken daily at 9 a.m. and 9 p.m. was 57·5°—the highest yet reached this season. The extreme temperatures were both recorded on Sunday, namely, 66·5° and 44·8°. On the morning of this day the grass minimum was 37·9°. Rain fell in measurable quantity on Wednesday only—amount, ·089 inch.

During the week ended Saturday, 30th June, the weather fell into an unsettled, thundery condition, owing to the gradual advance from the southward of an irregular area of low atmospherical pressure, with several subsidiary thunderstorm depressions of small size. In Dublin the weather remained chiefly fine until Wednesday, and Tuesday was particularly bright and warm—the thermometer rising to 72·4° in the screen, the highest temperature recorded this season so far. In many parts of the United Kingdom, however, thunderstorms occurred almost daily after Sunday evening. On Monday and Tuesday great heat prevailed in England, the thermometer reaching 88° at Cambridge, 85° in London, 84° at Loughborough, and 82° at York, Barrow-in-Furness, and Liverpool on the former day. On Tuesday the maxima were found further north—namely, 85° at York, 84° at Loughborough and at Nairn (in Scotland), and 82° at Barrow-in-Furness. Next day heavy rain fell in Dublin (·951 of an inch), and there was great gloom. Two dull, rainy days followed, but Saturday was fair and bright. In Dublin the mean

height of the barometer was 29·797 inches, pressure ranging between 30·125 inches at 9 a.m. of Sunday, and 29·547 inches at 9 a.m. of Friday. The mean temperature deduced from readings of the dry bulb thermometer, taken daily at 9 a.m. and 9 p.m., was 58·5°, the extreme temperatures being—highest, 72·4°, on Tuesday; lowest, 46·5°, on Saturday. Rain fell on five days to the amount of 1·248 inches. Of this large quantity, ·951 of an inch was credited to Wednesday.

The rainfall in Dublin during the six months ending June 30th has amounted to 12·113 inches on 87 days, compared with 6·741 inches on 67 days during the same period in 1887, and a twenty-three years' average of 12·399 inches, on 95·7 days.

At Greystones, Co. Wicklow, the rainfall in June, 1888, was 4·18 inches, distributed over 15 days. Of this quantity, ·96 inch fell on the 5th, ·89 inch on the 11th, ·79 inch on the 27th. and ·67 inch on the 7th. Since January 1, 14·91 inches of rain have fallen at Greystones, on, however, only 63 days.

PERISCOPE.

FRACTURE OF THE SUSTENTACULUM TALI, OS CALCIS, AND SCAPHOID.

AT a meeting of the New York Academy of Medicine, the President, Dr. A. Jacobi, presented a specimen showing fracture of the sustentaculum tali, the anterior portion of the os calcis, and the inner part of the scaphoid. The patient, a man thirty years of age, was injured by jumping from a height of thirty feet during a paroxysm of delirium tremens, and died soon after he was brought to the hospital. The appearance of the left foot closely resembled that of splay-footed valgus; the internal border in front of the ankle was lowered, and the front of the foot was somewhat abducted. The head of the astragalus was prominent on the internal border. The region of the internal malleolus was apparently normal, except so far as it was involved in the general swelling; the external malleolus was prominent, and its appearance suggested that the fibula had been broken above the ankle. A piece of bone, freely movable with crepitus, could be felt in front of the astragalus on the inner border, and there was marked crepitus just in front of the external malleolus. On dissection, the astragalus was found to be displaced forward upon the tibia about a quarter of an inch, its head being somewhat adducted, projecting internally beyond the scaphoid. A fragment of the scaphoid, including the entire height of its inner border and having an average thickness of an eighth of an inch, was broken off. The sustentaculum tali was detached and the anterior portion of the calcaneum was fractured transversely and crushed; its anterior articular surface was fissured, but

the fragments were not separated. It seemed as if the fracture must have occurred during abduction of the front of the foot, by the violent propulsion of the astragalus downward, forward, and inward, during which movement the prominent wedge-shaped angle below the external articular surface was driven into, and thus crushed, the anterior part of the calcaneum. The fracture of the scaphoid was apparently effected by the pressure of the head of the astragalus, possibly aided by the tension of the tibialis posticus and the anterior portion of the internal lateral ligament. The mechanism of the fracture of the sustentaculum tali was not easily comprehended. In the few reported cases of fracture of this process alone the cause had been inversion of the foot, while in this case everything pointed to the presence of abduction and eversion. An explanation that seemed plausible was that the fracture was effected by avulsion through the internal lateral ligament, made tense by eversion, the fracture of the process being aided by that of the adjoining portion of the calcaneum.—*New York Medical Journal*, 21st Jan., 1888.

LARYNGEAL PHTHISIS.

DR. F. INGALLS recommends the following mixture to be mixed with two or three times its volume of water and sprayed on the diseased larynx:—
R. Morphinae hydrochlor., 0 gr. 20 c.gr.; acidi carbolic, 1 gr. 50 c.gr.; acidi tannici, 1 gr. 50 c.gr.; glycerini; aquæ destil. ad. 10 grammes.—ft. mist.—*L'Union Médicale*.

REMOVAL OF THE CLAVICLE WITH REPRODUCTION OF THE BONE.

At a meeting of the New York Academy of Medicine Dr. Bull presented a patient upon whom he had operated two months previously at the New York Hospital. The man had syphilitic necrosis of the left clavicle. There was a large fungous mass at the inner extremity of the clavicle, involving the articulation, which resembled sarcoma, but improved under antisiphilitic treatment, which was continued for two months. At the operation three-fourths of the bone were removed. It was now two months since the operation, and the wound was healed except for a small superficial ulcer, the contour of the shoulder was perfect, and the motions of the arm were satisfactory. The tissues over the site of the portion removed were still too much thickened and indurated to make any bony outline perceptible or palpable on examination; but, from the preservation of the outline of the shoulder and the function of the arm, it was fair to assume that the bone was being actively reproduced. The arm had been kept quiet with adhesive-plaster dressing for six weeks after the operation. The operation had been a very simple one, as the necrosed bone lay loose in the sheath of periosteum. An incision was made over the bone, the soft parts were reflected with a periosteal elevator, and the bone was lifted out and divided with a key-hole saw. This was the second case in

which the speaker had performed this operation. In the first he had removed the inner half of the clavicle for sarcoma, no effort being made to preserve the periosteum. There was a very slight deformity in this case, due to falling forward of the shoulder. A dense fibrous tissue took the place of the bone, and the muscular power of the arm and its movements were perfectly satisfactory.—*New York Med. Jour.*, Jan. 21st, 1888.

REMOVAL OF A NUT-SHELL IMPACTED IN THE LARYNX.

DR. GEORGE W. MAJOR, Montreal General Hospital, reports the case of an infant of eleven months in whose larynx a portion of nut-shell had become lodged, on Monday, April 11th, 1887, a couple of hours before examination. The child was suffering from very difficult breathing, and was altogether in a very critical condition. An attempted examination with the laryngoscope proved a failure owing to swelling and a continued state of spasm. On passing the finger into the larynx, an irregular body was found in the posterior commissure of the larynx, firmly held between the vocal cords, then in a state of spasm. An attempt at removal with forceps of many sizes and patterns proved fruitless, as the small size of the passage would not allow of the opening of the blades. Before deciding upon tracheotomy, Dr. Major took an ordinary laryngeal probe and bent its tip outwards at a right angle. After finding the body with the forefinger of the left hand, he introduced the probe, bent as described, between the vocal cords and in front of the shell, and pressing upwards and backwards, succeeded in dislodging the body and carrying it into the upper pharynx. On turning the child on her face, the body was ejected and breathing restored. On the following day some slight hoarseness remained and the sputum was tinged with blood. No other untoward result was observed.—*Canada Medical and Surgical Journal*, May, 1887.

PERFORATION OF THE DUODENUM.

At a meeting of the Anatomical Society of Paris, M. Dutil exhibited a duodenum of a man who died eight hours after admission to hospital, and who had complained of nothing but vomiting prior to admission. On examination a simple ulcer which perforated the duodenum was found, without any trace of peritonitis.—*Journal des Sociétés Scientifiques*, No. 27.

ANTAGONISM OF STRYCHNIN AND COCAÏN.

M. BIGNON, of Lima (*El Genio Med.*), from a series of experiments on dogs with strychnin and cocaïn, concludes that cocaïn does delay the action of strychnin, but cannot counteract the effects of a large dose.—*Gazette Hebdom. de Med. et de Chirurg.*, No. 29.

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Geddes' Fluid Extract of Hemlock Bark.

(ABIES CANADENSIS.)

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By DAVID WARK, A.M., M.D.,

Professor of Obstetrics and Diseases of Women
at New York Medical College.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

SEPTEMBER 1, 1888.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*On the Treatment of Advanced Conditions of Equino-Varus.** By R. L. SWAN, F.R.C.S.I.; Surgeon to the Orthopædic Hospital.

I do not bring before the readers of this Journal the subject of the treatment of club-foot without feeling that I run the risk of wearying them by a too familiar theme—"a twice-told tale." My explanation will be that in a somewhat large experience of that deformity I have learned some practical facts in its management which may have escaped the observation of those who have not devoted a continued attention to its ailment.

I do not now refer to the scientific and recognised treatment of congenital equino-varus. That, I conceive, is universally understood and practised, if the surgeon have the opportunity of practising it, which, however, from many reasons, he is frequently denied. It can, I believe, be positively asserted that all cases of congenital equino-varus are perfectly curable by this method, if it be thoroughly carried out before the expiration of the first year of life, or before the effort to walk has commenced, always subject to the accident of relapse, which will occur in a less or greater degree if extension and natural position be not maintained for about five years. So invariable a result of a too frequent neglect explains how it is that the best efforts of the surgeon are wasted; and it is

* Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, January 20, 1888.

a striking fact that when the parents of children so afflicted are possessed of either sufficient means or culture to enable or impel them to devote close attention to such cases, the result is invariably good.

Amongst the poor a different state of things is seen. The child, on leaving hospital, may for a short time receive some care. Then the parents, perhaps "steeped in poverty to the very lips," perhaps from intemperance, or from careless or degraded natures, discard all appliances and all trouble. The child walks about unheeded, and after a period of neglect extending over few or many years, is brought by some sympathiser, or being old enough to feel "curtailed of fair proportion, deformed, unfinished," applies of himself to a new surgeon. In either case the old surgeon does not escape censure, unless he be dead or forgotten.

We are now confronted with a class of cases of equino-varus which present difficulties of a serious character. It is true that if we meet with a foot that has been walked upon only for a short time, we may still, by tenotomy and the division of other resisting soft structures, effect a cure, but the treatment will be very much prolonged, and its duration may be estimated by months and not by weeks. But as time goes on, and the child has been for years walking on the outer edge of the foot, it is well to inquire, What are the conditions that exist? and what hopes can be entertained of a cure? We find there is a partial luxation of the proximal extremity of the 5th metatarsal bone, whereby its shaft is deflected inwards; at the same time, the relations of the os calcis and cuboid are altered, so that the cuboid bone bears an abnormally large proportion to the outer edge of the foot; the integument on the new heel is thickened, and a bursa is present. Now, in this state of things, I have learned to distrust my own power of attaining a good result by ordinary methods. Much can, doubtless, be done by the immediate treatment of the surgeon and by subsequent boundless care, but regarding the hopelessness, in the class of persons to whom I have alluded, of such being bestowed, one is disposed to say, "Truly the name of the slough is Despond."

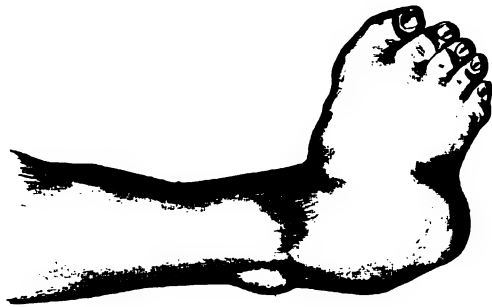
When the conditions so exist, there is, I believe, a small chance of a good result by tenotomy and extension, and another and more severe method of treatment must be adopted if a termination satisfactory to the patient and the surgeon is to be gained. The merit of first clearly seeing this belongs to Mr. Davy, who removed the cuboid bone in aggravated equino-varus of long standing. In

Fig. 1



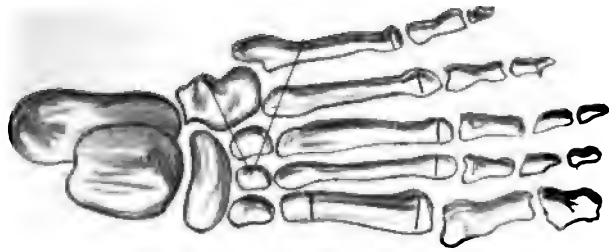
Case in which operation is inadmissible.

Fig. 2



Case favourable for operation.

Fig. 3



Lines denoting section through bones of foot.

the year 1876, with the concurrence of Professor Hamilton and Dr. M'Donnell, I removed a wedge from each foot of a girl aged thirteen, the subject of equino-varus, with a good result. Some time afterwards I learned that Mr. Colles had adopted the same method. But this question of priority is of little importance. There are in surgery no patent rights to be infringed. He who follows and observes intelligently, learns from the successes and from the failures of his predecessor.

The selection of cases suitable to this operation will next demand our attention. Speaking to a body of gentlemen who are anatomists, I need hardly say that the ossification of the tarsal bones is, in theory, singularly unfavourable to the rectification of equino-varus. The first bone after the astragalus which begins to ossify is the cuboid, and this at birth. At the end of the first year we find ossification advanced in the external cuneiform bone. Between three and four years old ossification has advanced in the middle cuneiform and scaphoid bones. Let it be granted, however, that all cases under three and a half or four years may be excluded from consideration. From that period till the tenth or twelfth year a gradually decreasing amount of improvement will be attained by the practice of tenotomy and extension, each case having to be judged on its own demerits. When a fair prospect of success appears probable—that is, when the osseous changes are not strongly marked, and where a certain amount of mobility in the tarsal articulations is preserved—the practice should be here, I think, to proceed with the milder and safer treatment, and if the result be not satisfactory, to recommend ablation of portion of the tarsus.

At a more advanced period—from the 10th or 12th to the 20th year—new features are presented. Here we find the tarsal bones apparently thickened, the large bursa on the outer tarsal aspect is dense, and includes in its base the cuboid and the tarsal end of the 5th metatarsal bone, and may extend to a greater or less degree on the dorsum of the foot. There may be varieties in the existing conditions—in one case there is considerable mobility between the tarsal bones, in another a marked rigidity exists, and the entire tarsus moves *en masse* at the ankle-joint on manipulation. The weight of the body, instead of passing vertically to the astragalus, is transmitted obliquely through a line passing from its superior and internal to its inferior and external margins. The head of the bone is twisted inwards. The 5th metatarsal bone is not alone deflected inwards, but forms a distinct curve, which may easily be

demonstrated in the living subject. In addition, the changes in the soft parts are marked. The space between the inner malleolus and tendo-Achillis is diminished; also that between the inner malleolus and heel. The plantar fascia is tightly contracted.

In such instances there can be no other resource—if treatment be at all attempted—than removal of a portion of the tarsal bones, and the results, in my experience, justify this procedure, even in cases long considered hopeless.

There is a condition which I have often observed, and which has decided me not to recommend operation—that is, an atrophied state of the anterior part of the foot. This is invariably seen in examining a person in middle life the subject of equino-varus, and sometimes at an earlier age. It is hard to conceive how such a foot could be useful, even if the sole were approximated to the ground.

The operation is a very simple one. The limb having been Esmarched, a horizontal incision is made parallel to the outer edge of the foot extending from the middle of the cuboid forwards over the 5th metatarsal bone; another is made at right angles to this from its centre, more or less long, as necessity will arise. This will display a couple of outer slips of the extensor longus digitorum, which is displaced inwards. The peroneus tertius and the muscular part of the extensor brevis digitorum, are also seen. The bursa is displayed. This may be dissected out. The bony wedge may now be removed. In a young subject a strong knife and sharp chisel, used by the hand, may suffice, and a clean cut may thus be made. At a more advanced age, Hey's saw, or the use of the mallet with the osteotome, will be necessary. One or two vessels, at most, require ligature. There is a redundancy of thickened integument which may partially be removed. The surfaces may now be approximated. It will generally be found that, in order to obtain accurate apposition, a piece of bone will still require to be removed from the apex of the conical vacuum. The integuments are then sutured, and an opening is left at the junction of the two incisions for drainage.

The necessity of firm apposition and immobility of the parts is obvious. I have tried a variety of expedients to secure these conditions, but have discarded all—save one, the simplest and, I believe, the most efficient.

Having dressed the wound with antiseptic precautions, the foot is given to the care of an assistant, who maintains correct position.

Fig. 4.

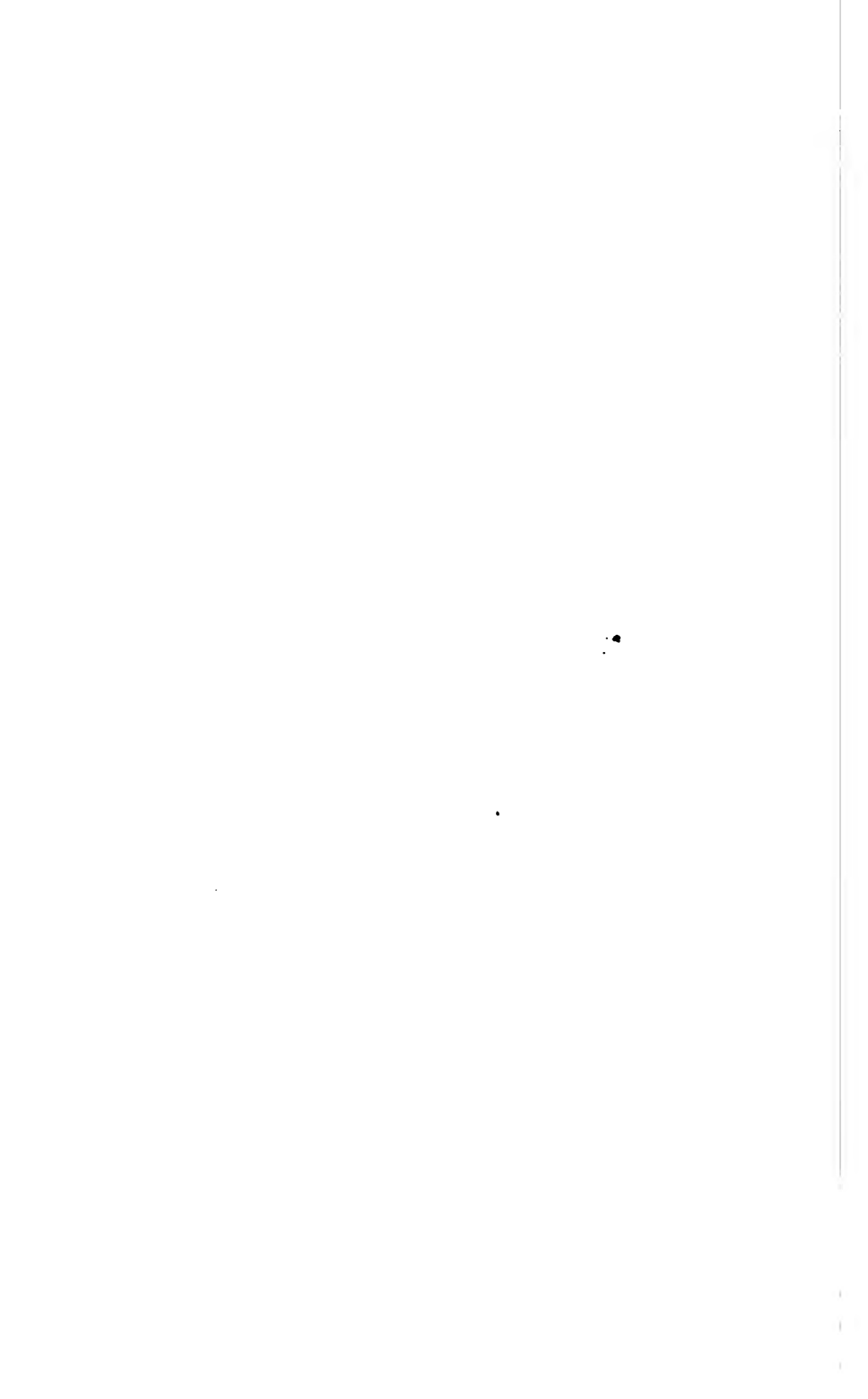


T. B. before operation.

Fig. 5



T. B., showing hollow claw foot one year after operation.



A carbolised sponge, or one of Burroughs' antiseptic pads, is placed over the dressings; a plaster of Paris bandage is then carefully applied over all and position is maintained until it has set. The foot is not then disturbed for some time. The capsule of eucalyptine or thymol in the pad may be ruptured on the 3rd or 4th day by a little pressure.

On the 6th day, if the temperature or other symptoms do not previously indicate mischief, a window is cut over the pad. The wound is easily approached, and has never, in my experience, given any trouble till firm union is established. The division of the tendo-Achillis and the application of a Scarpa's shoe or other appliance is usually necessary to gain complete rectification.

On examining the wedge which has been removed, and of which a good example is seen in the illustration, taken from a boy eighteen and a half years old, it will be found to consist of the anterior three-fourths of the cuboid bone, all the external cuneiform except its posterior part, the proximal extremities of the 5th, 4th, and 3rd metatarsal bones in decreasing amount. The second part removed will consist of a portion of the middle cuneiform.

The soft parts removed will be the muscular portion of the extensor digitorum brevis, the two outer tendons of the extensor digitorum longus, the peronei tendons, portions of the 2nd and 3rd plantar, and 3rd and 4th dorsal interossei. I have lately had the opportunity of seeing a case which was operated on nearly two and a half years ago. The boy was then six and a half years old. He was exhibited at the last meeting of the Surgical Section of the Royal Academy of Medicine in Ireland. Those are the casts taken of his foot before and two and a half years after operation. There was a surprising mobility and good use of the foot, and I examined this with other cases very carefully to account for such favourable conditions. It will be seen, if the lines of bony section be traced, that the transverse tarsal joint, between the os calcis and cuboid, astragalus, and scaphoid, is uninjured; likewise the articulation between the scaphoid and cuneiform bones. An obliteration, therefore, occurs only of the joints between the three outer metatarsal bones and the external cuneiform and cuboid, in which the normal motion is limited. It may, in addition, be fairly hoped that the development of the foot will not be very much interfered with, as the metatarsal bones have their epiphyses at the distal end.

The case of T. B., aged ten years, here illustrated, is of interest as bearing out the pathology of hollow claw foot as described by

Duchenne. Though a very useful and comparatively symmetrical member, it displays the characters of that affection. The mechanical interference with the functions of the interossei would probably explain it.

I have up to this period selected 34 individuals as proper subjects for the performance of this operation. The youngest was four and a half, the eldest was eighteen and a half years of age. Of these 19 had one foot affected. The remaining 15 had double equinovarus. Although in all cases where operation is not a necessity to save life, "slow pausing caution" is essential, and more especially where the marginal line is approached, where tolerable comfort and symmetry may be obtained by a less severe method, still the facility and the immunity from risk by careful dressing, and above all, the excellent results of the operation, may, I think, justify in suitable cases its universal adoption.

" Diseases desperate grown
By desperate appliance are relieved,
Or not at all."

ART. X.—*Heredity in Purpura Hæmorrhagica.** By J. F. KNOTT,
M.B.

THE case which forms the text for the communication which I have the honour to bring before the Section of Medicine occurred in the practice of my friend Mr. G. F. Roughan, of the Frenchpark Dispensary. I was staying for a few days in the neighbourhood, and saw the patient, in consultation with Mr. Roughan, on the first day of his illness. He was a man of seventy years of age, who had enjoyed fairly good health up to that date. He was attacked with epistaxis in the morning, and, as this had resisted the usual household remedies, medical aid was summoned. We saw the patient about 3 p.m. The bleeding from the nose, principally, if not solely, from the right nostril, still continued steadily: it was moderately profuse. The loss of blood up to that time amounted to about a pint. It coagulated fairly well, and a pendent clot of up to an inch and a quarter in length, or so, always tended to form at the anterior part of the septum narium, when this region was left untouched for a few minutes. The patient was sitting

* Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, January 27, 1888.

upright in a chair, with the head leaning forward, and was naturally somewhat weakened by the loss of blood. What specially alarmed both him and his family, however, was the fact that an apparently similar attack had proved fatal to his son, a young man of twenty-one, about a year before.

On examining the patient, I observed some small ecchymotic patches on the temples, which led me to look over other parts of the surface, when I found that dermic extravasations—for the most part extremely minute—had formed here and there over the whole cutaneous area; they were best marked on the temples and lower part of legs, but no part of the surface was quite free. The patient's attendants had already noticed them; and, on inquiry, I ascertained that, in the case of his son, already referred to, a similar phenomenon had occurred. The young man, like his father in the present instance, had been seized with epistaxis without assignable cause. Cutaneous extravasations began to form almost simultaneously. He was skilfully attended by Mr. P. C. Walsh, now of the Castlereagh Dispensary, but the bleeding resisted everything that medical skill could devise. It persisted during the night, and, in the course of the second day, the patient "vomited up a basinful of black blood," and died soon after. This history interested me very much. Further questioning elicited no other peculiarities either of health or disease.

Our patient, whose epistaxis we were specially called upon to treat, was of a somewhat apathetic disposition, but appeared possessed of about average intelligence. The body was fairly well nourished; there was no more evidence of anæmia than would be accounted for by the loss of blood which had occurred during the present bleeding; a slight venous hum was heard over the external jugular vein; there was no œdema of the legs, and no evidence of organic disease of the heart; the pulse was beating regularly at the rate of 78 per minute, and was soft and compressible. The patient was now placed sitting bolt upright in a chair, with the feet in water (containing mustard), as warm as could well be borne, and was taught to compress the right nostril with the left hand, while he held the right arm vertically above the head. Local astringents were applied at intervals; tincture of the perchloride of iron was administered by the mouth, and a full dose of ergotin hypodermically. All these things failed, however, to control the hæmorrhage; the blood escaped into the pharynx when prevented from passing by the nostril, and, after three-quarters of an hour of

this experience, the purpuric rash was obviously increasing, while the epistaxis continued as before.

Accordingly, it was determined to plug the posterior nares—a procedure which I effected with the aid of a modification of Bellocq's cannula, ingeniously devised by Mr. Roughan, and much more convenient and satisfactory in application than the original instrument. The plug was firmly lodged, and the nostril was also filled with lint, steeped, as was the posterior tampon, in turpentine, and firmly secured in position by knotting over it the ends of two ligatures attached to the plug behind.

During the operation of plugging I noticed that a slight abrasion, or, apparently, an amount of friction, which, ordinarily, would have had no effect, caused the mucous membrane to bleed freely; so that the escape of blood during the procedure was considerable. The patient, accordingly, felt faint when the operation was concluded; but I would not allow him to lie down for some time after, as I hoped that he should derive further hæmostatic advantages from the temporary cardiac weakness while in the upright position. When this latter symptom had passed away the patient was placed in bed as comfortably as we could make him, with the head raised, and the feet moderately warm. Still, although the bleeding was checked, a slight oozing continued, and the coagulative power of the blood seemed diminished, so that it soaked *through* the compressed lint with comparative ease, although in small quantity. A supply of medicine (tincture of the perchloride of iron) was left with the patient, with directions for regular administration. I had, from the first, given the gravest possible prognosis; and, at our suggestion, a clergyman, was at once sent for, and the rites of the Roman Catholic Church, of which the patient was a member, were administered before we left the house.

Mr. Roughan and I again saw the patient next day, and found him fairly comfortable, except that he complained a little of "the thing" in the back of his throat—meaning the plug. The same slight oozing of blood still continued. The pulse was now 72 per minute, soft and compressible, but apparently much more full than on the previous day. We did not think it advisable to disturb the plug. A hypodermic dose of ergotin was given, and the patient got an increased quantity of his iron styptic.

I did not see the patient again. Mr. Roughan afterwards informed me that he died on the following Thursday; the same oozing of blood having continued to the end, and the patient getting

gradually weaker. Mr. Roughan did not see him on the day of his death; but a letter which I received from a young friend of mine living in the neighbourhood, who is a highly distinguished graduate of Trinity College, and who, being much interested in our patient, saw him at frequent intervals, contained the following information:—"The patient died on Thursday night, after lingering, but generally in a conscious state, until that time. The only observation I made about him was the strong, regular pulse, which remained until just before his death, or, at least, until a few hours of it, when I last felt him. It did not seem to have grown in the least fainter despite the loss of blood, which, at intervals, continued to trickle from the nostrils. He was able to take a beaten-up egg, and a few other things; but, for more than half the time after you left him, he remained in a sleepy or semi-conscious state, though when he awoke out of it he was wonderfully conscious."

This case presents several points of interest, whether we examine it with regard to the diagnosis, its pernicious tendency, or the history of heredity. The last, as shown by the occurrence of a train of similar symptoms in father and son, involves a complication in the diagnosis, as it might lead some of us to think of hæmophilia, the hereditary tendency of which is usually much more pronounced, and which, in some cases at least, runs a very similar course. But the absence of any preceding indication of "love of bleeding" decided me in my original view that the case was one of the "*Morbus maculosus*" of Werlhof—more familiarly known by the name which I have placed at the head of this communication. I should also mention, before concluding, that there were no elevation of temperature and no enlargement or tenderness of the joints, and that, although there was some melæna afterwards, it was not more than would be accounted for by swallowing of the blood which trickled down the pharynx from the posterior nares.

I do not think it advisable to lengthen this short note of an uncommon form of disease by discussing any of the thousand and one shadowy theories of purpura and hæmophilia which have up to the present been placed before the professional public. None of them appear to me to have any established basis of demonstrable scientific facts. The peculiar clinical features of the case itself will, I trust, be accepted as a sufficient apology for placing it upon record.

ART. XI.—*Perforative Peritonitis: a Clinical and Experimental Study.** By J. S. M'ARDLE, F.R.C.S.; Surgeon and Lecturer on Surgery St. Vincent's Hospital; late Senior Demonstrator, Catholic University Medical School.

WITHIN the past few years I have had much to do with peritoneal troubles arising in the course of surgical affections. The more I see of them the more firmly am I convinced that the fatal forms, especially suppurative and perforative, are still little understood. It is only in recent times that these affections, hopeless in the hands of the physician, have been received into the surgical fold. Already there are on record many cases which demonstrate the wisdom of what some sneeringly term the "laparotomy epidemic." Many and valuable lives have been saved by timely surgical interference in instances of grave peritoneal disease, which, in the hands of our critics, could not possibly have ended favourably.

This revolution in the results of treatment has led me to watch with more than ordinary care the symptoms which precede death in all the fatal cases of perforative and suppurative peritonitis which came under my observation, and to examine as soon as possible after death the organs most likely to be affected. This I did in the hope of determining with some degree of certainty the cause of the very high mortality which attends these lesions. I have selected two out of eleven cases of perforative and suppurative peritonitis. Of the eleven cases seven died. In the four which recovered, laparotomy was performed. In four of the fatal cases laparotomy was performed; in one, a resection of perforated spot; in a second, suture without resection; in a third, foetid pus had accumulated in pelvis, but a great extent of the small intestine was in a semi-gangrenous condition, while the fourth had diffuse cancerous disease of the mesentery, and perforation at the mesenteric border of the last coil of the ileum. One of the two in which there was no operation I record below, as also the case of suture without resection.

CASE I.—*Perforation of Vermiform Appendix Cæci.*—Joseph O'K., aged thirteen years, came under my care on November 12th, 1887, when the following note was taken by my friend, Mr. Hickey:—Family history good; he himself has had no illness before present one, which commenced

* Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, Friday, June 1, 1888.

as follows:—On November 6th he received a kick on the right side of the abdomen. This did not cause him much uneasiness until the 9th, when he complained of pain in the right inguinal region, for which he got a purgative draught, which caused a slight evacuation of the bowels, but much increased the pain, which became paroxysmal in character. Vomiting set in on the 10th, and continued until the night after the 12th, when, on admission, he was found in the following condition:—Pulse weak, 120; temperature, 103°; face drawn and anxious-looking. He lay on his back with his legs drawn up, so as to relax abdominal muscles. Respiration shallow and entirely thoracic; abdomen distended and tympanitic; liver dulness present; movements of intestine visible through abdominal wall, which is very tender on pressure, especially over right iliac fossa, where, as well as at umbilicus, he has very severe paroxysmal pain. There was slight dulness over right iliac fossa, extending towards middle line over edge of true pelvis. On digital examination through the rectum the pelvis was found filled with coils of small intestine, and pressure upwards, backwards, and towards right sacro-iliac synchondrosis caused pain, such as the patient experienced during the exacerbations which occurred every ten or fifteen minutes. An indistinct tumour could be felt through abdominal wall at dull area.

Opium was administered, $\frac{1}{4}$ -grain every 4th hour. Nutrient enemata every 6th hour, each containing half an ounce brandy; yolks of two eggs; two drachms of liq. pancreaticus; two ounces of beef-tea, and three grains of quinin; and an ointment of belladonna and glycerine was applied over abdomen.

13th.—Patient had a very quiet night; slept well; tenderness much less. Pulse, 99; temp., 101.2°.

14th, 9 a.m.—Strength increased; breathing better; tenderness absent. Pulse, 98, regular and full; temp., 103°. During the 13th and through the night had iced milk and small amount of iced beef-tea, which were not rejected.

At 9 p.m. he complained of sudden pain in right iliac fossa; this was followed by collapse; pulse imperceptible at wrist; cold clammy perspiration over face; great distension of abdomen; liver dulness absent; breath became extremely offensive; skin appears like damp wash leather.

15th, 2 a.m.—Still in a state of collapse, unconscious; pulse just perceptible at wrist, but cannot be counted; temp., 97°; vomiting of very foetid material, during which occurrence there is no complaint of pain.

4 a.m.—Vomiting again takes place; the lower bowel is evacuated, and some convulsive movements occur. Consciousness does not return, and the patient dies at 4.30 a.m.

The *post mortem*, four and a half hours after death, reveals a peritoneum filled with a gas so foetid that it is impossible to come near the body for some considerable time after opening it. There is very little evidence

of peritonitis except at the junction of the ileum and cœcum, and there is a gangrenous and perforated spot in the vermiform appendix. A collection of very foetid pus is found in the true pelvis and in the dilated end of the appendix.

Now, here is a case in which, until 8 o'clock on the evening preceding death, the patient's pulse, temperature, and general condition had manifestly improved under opium, quinia, and rectal nourishment. Suddenly perforation occurs, his pulse disappears; from being slightly flushed his face becomes ashy pale, cold and clammy; his eyes deeply sunken, and surrounded by dark areolæ; the temperature goes down, profound collapse is established, and he dies seven hours after the occurrence of perforation. A peculiar and penetrating fœtor is present during the last hours, as if a general disintegration had already set in even in the presence of all the unmeasured forces which constitute what we call life.

The second case is one of gastric perforation.

CASE II.—The patient, a housemaid, Margaret D., aged twenty-two years, came under my care on the 1st March, 1888. For two years she had suffered from symptoms of gastric ulcer. The present attack commenced as follows:—For some days she suffered from abdominal pain, which became very severe at 5 o'clock on the evening before admission. She took a purgative draught, which she vomited about 6 o'clock. At 8 p.m. vomiting again occurred—this time the vomited matter was streaked with blood. At 3 a.m. of the 1st of March the vomiting became very troublesome, and severe pain was felt in the left hypochondriac region. A purgative enema was now given her. Extreme pain followed a free evacuation of the bowels; vomiting continued, and at 5 a.m. she felt a sudden increase of the pain, and became cold, clammy, and pulseless. This state of collapse continued until her admission at 12 noon of March 1st, when her condition was as follows:—Pulse very rapid, irregular, and at times imperceptible. Temp. $101\cdot4^{\circ}$; face pale, drawn, and anxious-looking; eyes sunken; pupils dilated; tongue red, dry, and hard. She complained of severe pain at cartilages of 8th, 9th, and 10th ribs, and of rather less pain in left lumbar region. She also had severe pain passing from the middle of each clavicle, across the shoulder and up to nape of neck. The abdomen was distended and tympanitic, slightly tender on pressure, especially in left lumbar region, over which there was a well-marked area of dulness.

Diagnosis.—Perforation of anterior wall of stomach, with extravasation of contents; peritonitis most severe on under surface of diaphragm, affecting both phrenics, and thus producing clavicular pain.

Treatment.—She was placed in recumbent posture, with hot jars at her feet and sides. An ointment of opium, belladonna, and glycerine was gently smeared over abdomen and covered with spongiopiline. A nutrient enema was given every 4th hour, and $\frac{1}{4}$ -grain injections of morphin every 3rd hour. She was kept perfectly quiet, and allowed occasionally small pellets of ice to allay the great thirst she complained of. Under this treatment she rallied, became quite conscious, vomiting ceased, and her pulse came down to 100 per minute; temperature, 105.5° . The urine, which was normal, had to be taken away by catheter.

2nd.—Had a good night, slept five hours; tympanites greater; liver dulness quite absent; dulness and fluctuation in both loins; tenderness over entire abdomen; temperature, 101.5° ; pulse, 140. During the day the pain increased, and vomiting set in; the pulse became weak, the breath fetid, the urine dark, having a peculiar sickening and ammoniacal odour.

At 6 p.m. the temperature fell; patient had shivering; pulse became quick and almost imperceptible; cold perspiration broke out all over body. Believing that septic absorption was the cause of these unfavourable changes, I performed laparotomy, washed out peritoneum, and sutured a perforation in the anterior wall of the stomach within an inch and a half of the cardiac orifice.

Notwithstanding a lengthy operation she rapidly recovered from the effects of the anæsthesia, and in one hour afterwards her pulse was better than at any time since perforation occurred. Three hours later collapse set in, and she died of exhaustion early on the morning of the 3rd.

The expectant method of treatment had allowed the entire peritoneum to become actively engaged in the absorption of the deleterious products of disease, and death was already rapidly approaching when the operation was undertaken.

I now exhibit the vermiform appendix cæci removed from Case I., and a small calculus which had formed therein and led to its dilatation and perforation.

I also desire to call attention to the stomach removed from Case II. The cicatrix of an old ulcer is found on the posterior wall; its contraction has led to the production of an hour-glass appearance such as was present in a case brought before this Section of the Academy by Dr. Finny. The perforated spot is firmly sutured, and corresponds to the centre of an irregular ulcer on the anterior wall of the stomach.

Although the foregoing cases are only instances of intestinal perforation resembling in most particulars those of everyday occurrence, I would direct attention to the symptoms which

attended them, with the object of eliciting an expression of opinion as to the pathological processes which brought about a fatal result.

When we compare the cases we find that the patient with perforation of the stomach lived three days, while in the other death occurred in seven hours after perforation. In the stomach case, symptoms of collapse disappeared before those of blood infection became marked; in the other collapse became more profound until the end. In both the foetid and ammoniacal odour which attends septic intoxication was present, but in the stomach case not until sixty-two hours after perforation, while in the other it developed in three hours. In the former the semi-solid and liquid contents of the stomach entered the peritoneum in large amount; in the latter only gas and a little liquid escaped through a small opening. The stomach case seemed to me one of uncomplicated septic poisoning. The other was attended by a prostration which can only be accounted for by peritoneal absorption of some material capable of profoundly influencing the heart and central nervous system. What this material is, how this material exerts its influence, are the questions which I desire with your permission to discuss.

To enter into a chemical study of the intestinal contents is not my intention. Clinical observation has led me to believe that there is a marked resemblance in the symptoms attending intestinal obstruction, perforative peritonitis, and poisoning by putrid animal matter, and, although each will have its own characteristic symptoms, running through all will be changes which cannot be accounted for by the varying conditions found after death in the solid tissues of the body. Our search must therefore be pushed to the liquid and gaseous constituents and contents.

The intestinal contents prior to perforation must first engage our attention; next the influence of each when introduced into the blood, and last the effects of their intra-peritoneal injection. Especially in obstruction the small, and to a greater extent the large, intestine contains, as well as harmless portions of dejecta—

1st. Innumerable putrefactive micro-organisms, and the products of their action.

2nd. The products of inflammation—sepsin, &c.

3rd. Gases, especially hydro-sulphuric.

When perforation occurs these substances enter the peritoneal sac, and on their entry begins the chain of symptoms which end in death.

Now, in cases of rapid death after perforation there is no marked

change in the peritoneum, and if called upon to examine that membrane, even microscopically, you could find therein no marked evidence of inflammation, and certainly no cause for a fatal result. We must, therefore, endeavour to discover the influence of each of these apparently active agents when introduced into the blood and into the peritoneum; then, by a comparison of clinical experience with experimental results, draw conclusions as to cause of death in the cases before us.

Septic and putrefactive micro-organisms, when introduced without the products of their action, are harmless so long as the tissues are healthy—in fact, they undergo disintegration. This holds good in intra-venous injection according to Klein, and in intra-peritoneal according to Grawitz.

The injection of putrescent animal matter into the blood is followed by collapse, cold, clammy perspiration, early cardiac failure, with disappearance of heart sounds.

When introduced into the peritoneum, if in small amount, absorption takes place without harm; if in large amount, after some hours a rise of temperature, followed by shivering, purging, collapse, and death in eighteen to twenty-four hours.

If sepsin be introduced into the blood, it produces febrile symptoms, vomiting, shivering, torpor, spasms, collapse and death. When placed in the peritoneum no immediate change takes place, but in a few hours the animal becomes drowsy and feverish, in from six to ten hours cold and bathed in perspiration, and, if a large amount has been used, collapse sets in, followed by death.

In the experiments of Bernard, injection of hydro-sulphuric acid into the veins produced profound collapse, which came on in a few minutes and lasted four to six hours. At the end of this time the breath was foetid, stained lead paper black, and the urine contained H_2S . When injected into the peritoneum in small amount, prostration occurs in from ten to fifteen minutes, and lasts for a few hours; when in large amount, collapse is early and may be kept up until death occurs.

In Emminghaus's cases of perforative peritonitis, in which early and extreme prostration occurred, the urine contained H_2S , and later the same gas was eliminated from the lungs.

From the above it would seem that while none of the substances can of themselves set up all the symptoms, a combination of them is capable of producing all the various symptoms which attend cases of perforative peritonitis.

The initial collapse of gastric perforation may be accounted for by shock, the subsequent gradual sinking being usually due to septic absorption.

The early and prolonged prostration of intestinal perforation, especially when low down, may be accounted for by absorption of H_2S , accompanied by shock, the fatal issue being of septic origin.

In both, when the intestine is overloaded, the products of putrefaction may come into play, and add the symptom of early cardiac failure.

Now, if I am correct in the views above put forward, they teach a lesson of which modern surgery has already commenced the study—that is, that the cause of death is removable in those apparently hopeless cases.

Up to this, my case included, there are on record 26 cases of laparotomy for ulcerative perforation of the stomach or intestines.

The result of 22 are given by Steinthal (*Verhandlung deutsch. Gesell. für Chir.*, 1888). Eight of the 22 recovered. In only 1 of these was suture required; in 1 the appendix cæci was removed; in 3 suppurative peritonitis was present; in the others septic peritonitis existed. Incision and washing out of the peritoneum saved these cases even under such unfavourable circumstances. In the unsuccessful cases the operation was, as in my case, too long delayed, the perforation could not be detected, or secondary collapse occurred. Of the remaining cases, 1 recovered completely, a second with a fæcal fistula, 2 died within twenty-four hours after operation. These results would strongly support the views put forward in my communication, and should impress us with the necessity of early operative interference in such cases.

ART. XII.—*The Influence of Position on Fractures of the Lower Extremities.* By WILLIAM COLLES, M.D., Univ. Dubl.; Fellow and Secretary, R.C.S.I.; Surgeon-in-Ordinary to Her Majesty the Queen in Ireland; Regius Professor of Surgery in the University of Dublin; Surgeon to Steevens' Hospital.

I DO not recollect to have found in the works of authors on the Practice of Surgery a satisfactory explanation of the fact that the change of posture from the horizontal to the sitting position is so injurious to patients labouring under fracture of any of the bones of the lower extremity. A moment's consideration will, however, fully explain the cause and effect.

If we examine a person lying in the horizontal position we find the head of the femur at least three inches above the tuberosity of the ischium; whereas, when sitting up, the femur is at right angles with the axis of the body. These two points are on the same line. perpendicular to the femur, one above the other.

As the body moves on the extremity of the ischium in assuming the sitting posture, the head of the femur must be pushed downwards for two or three inches. This must influence the point of weakest resistance—the seat of fracture. This, if the fracture be oblique, will have the tendency to cause the fragments to slide one over the other; or, if the fracture be transverse, and the fragments accurately applied to each other, will force them to assume a more or less obtuse angle.

Hence, I think we cannot be too careful in frequently inspecting the position of the limb, especially while the union is yielding and soft, and offers an objection to putting up these fractures in immovable apparatus, which can only conceal the deformity, but cannot prevent it.

ART. XIII.—*The Work and Rations of the Soldier.** By
J. HICKMAN, Army Medical Staff.

SECTION I.—THE WORK OF THE SOLDIER.

IN comparing the value of foods as force-producers, it has been shown^b that all work must be reduced to the one common standard, expressed in foot-tons. Though the object of this section is the consideration of external work, it may be useful to make a few remarks on the work done by the heart, and generally the automatic labour of the body, especially, too, as this internal work seems to increase proportionally with the external. On an average the heart makes 70 strokes a minute, discharging at each stroke about $1\frac{1}{2}$ ounces of blood against a pressure of over 4 lbs. per square inch, and consuming an amount of energy in the 24 hours of 124 foot-tons. The quantity of air pumped in and out of the lungs in 24 hours varies from 400 cubic feet, when no exertion is being made, to 900 cubic feet in the case of the hard-working labourer. It has

* Since this article was written, an admirable paper by Colonel Onslow on "The Physical Training of the Soldier" has appeared in the Journal of the Royal United Service Institute, and should be consulted. The reader is also specially referred to Parke's "Practical Hygiene," 1887, pp. 239-253.

^b See Dublin Journal of Medical Science for July, 1888.

been calculated that the work which has to be performed by the muscles in the act of breathing amounts to 11 to 21 foot-tons in the 24 hours.

These two instances are sufficient: digestion and the different processes of life involve also so much expenditure of force; in the nourishment of the schoolboy and young recruit the energy requirements of growth should not be forgotten in the selection of a dietary. The total internal mechanical work of the body may be assumed to be an average of 260 foot-tons.

The external works varies so much; a country postman, 150 lbs. in weight, walking his daily round of 20 miles, would do work equal to 353·4 foot-tons; ordinary day labourers, such as we see in the roads, probably average 350 foot-tons. In Weston's feat of 50 miles a day, his daily work was no less than 793 foot-tons. In the six-day contest between Weston and O'Leary, the latter did over 1,900 foot-tons every 24 hours. Gale's accomplishment of 1,500 miles in 1,000 hours amounts to the enormous endurance of 560 foot-tons a day for six weeks continuously.

The maximum for ordinary men is 600 foot-tons, and this cannot be continued for more than a few days. Perhaps a classification might be made:—

Light work	-	-	150-200 foot-tons per day
Average „	-	-	300-350 „
Hard „	-	-	450-500 „
Laborious „	-	-	500-600 „

Taking the principal work of the soldier to consist in marching, walking at 3 miles an hour is equivalent to raising $\frac{1}{20}$ th part of the weight of the body through the distance walked.

Using this calculation, and assuming a man to weigh 150 lbs. with his clothes, we get the following tables:—

Kind of exercise	Work done in tons lifted 1 foot
Walking 1 mile - - -	17·67
Do., and carrying 60 lbs. - -	24·75

It is thus seen a light day's work would be from 8 to 10 miles, and an average day's work from 16 to 18; laborious work would be represented by about 30 miles walk a day, and practically could hardly be continued for long. A march of 10 miles with a weight of 60 lbs. (which is nearly the weight a soldier carries when in marching order, but without blankets and rations), is an average day's work. 20 miles' march with 60 lbs. weight is a laborious day's work.

In heavy marching order, with great coat and valise, &c., his weight will amount to nearly 200 lbs., and with this weight each mile will be equal to 23·6 foot-tons.

Taking all the duties, 300 foot-tons is a fair estimate of the daily work of the soldier. When dietaries are constructed for a large body of men this amount may be accepted as a standard.

A soldier's drill without arms is estimated as one-third more fatiguing than ordinary walking; in calculating punishment-drill allowance must be made for the fact of its being punitive, which increases considerably its exhausting effect.

Now, having arrived at the true meaning of a day's work, and, as previously shown, this only represents the $\frac{1}{4}$ th or less of the available energy to be provided, the amount of necessary food can readily be arrived at; if the work or strain is increased, this proportion becomes even less. In calculating the work undergone in marching, the ground must not be supposed to be even, and the weights of the accoutrements are hardly ever adjusted correctly. The attitude of the soldier is stiff, and even marching at ease he observes a certain rhythm in his steps and a uniform pace; a pedestrian varies his steps and his pace, and so takes the strain off. The speed or rate of going must be considered, for every mile of additional velocity the resistance is increased about one-fourth. In the case of the soldier, if he were allowed to march easily, and if the weights were not oppressively arranged, he ought to do 12 miles daily for a long time, provided he was allowed a periodical rest.

So much for marching. The duties of the soldier include drills, parades, sentry or guard picket, orderly and various fatigues, the cleaning of clothes and accoutrements, and they are varied by route-marches, gymnastics, musketry, or some other form of military exercise. In time of war the work is much more arduous, requiring an excellent physique to carry it out successfully. When an infantry soldier has finished his recruit's drill his work becomes comparatively light, and it would seem difficult to contrast this work with the ten hours' labour in the fields. The training of the recruit consists of four hours' drill a day, and this amount does not seem excessive, but the strain is greater than it appears; it is the difference between having a certain amount of work and having it compressed into four hours—the speed is increased and so is the strain. If the calculations were made exactly, the four hours' drill would perhaps equal the day's work of the agricultural

labourer. Even standing at attention is a constrained position; this and the various exercises bring into action fresh sets of muscles and so increase the fatigue; the heart, lungs, &c., have been fashioned under entirely other circumstances and occupations which enabled them to perform their functions in another manner than now called upon for the exceptional exercise of drill. Guard duty is important in keeping troops up to efficiency; by its mere action in breaking and shortening the times of rest it has a more or less wearing effect. The fact of non-commissioned officers and the band sending so few to hospital is accounted for by their exemption from this duty. Off parade the life of the soldier is an essentially active one; the different amusements and occupations for his leisure hours leave him little time for sitting down or resting—in fact, duties and vigorous field sports in the day time require ample time for sleep, and the value of recreation may be abused; the policy of extending the hours for passes at night is a doubtful one.

This sketch is only meant to give an idea of the routine work in time of peace; the description would have to be modified to apply to any special part of the army; the work of mounted branches is naturally much harder, and involves the expenditure of much more time and energy. The question of war duties will not be discussed; it would be impossible to come to any estimate of the work involved; the outline given above is sufficient, and includes a general idea of work under any condition.

Since time of peace may be looked upon as resting and repairing waste before a campaign, the duties then should be undertaken with the object of fitting the soldier to bear toil and exposure; by improving his bodily health and physique he is the better able to endure fatigue and hardship. It is right and fitting that a certain amount of storage material or balance should exist in the constitution of every healthy man. Every healthy individual possesses such a stored amount of force which will stand him in good stead when a demand arises for prolonged unusual exertions, or when any period of enforced starvation occurs, as during a lingering fever or other exhausting disease.

This reserve fund is specially important in the soldier to fall back on in the trials of service in the field, or to counteract the various depressing effects of climate and disease to be met with in his tropical experience.

It must be now understood that the exact and precise balance between food and work must be qualified by providing for not

only the amount of force employed for the purpose of daily life but also for a natural amount of store or reserve.

SECTION II.—FOOD OF THE SOLDIER—ITS ADJUSTMENT IN PEACE.

The conditions of a perfect dietary are supposed to consist in (Letheby):—

(1) The determination of the real wants of the body under different circumstances of age, labour, and climate; (2) a proper selection of food as regards quality, nutritive power, appetising property, digestibility and price; (3) the association of foods in such wise as not to offend the appetite or burden the digestive powers; (4) a right treatment of them by cooking, so as to render them useful to the system; (5) a just distribution of the daily diet in appropriate meals.

These remarks especially apply to the soldier, who, as a machine, must be kept in good repair, and sufficient motive power supplied. A deficiency means diminished strength and impaired strength, which, for a time, if not permanently, incapacitate the individual and render him unable to fulfil his duties. As before stated, work must be evolved from the food and not from the framework of the body. Individuals vary so greatly in temperament, mental power, and bodily activity, and capacity of digestion, that the principle of a general ration is hardly scientific. In soldiers who are about the same age, and whose duties are uniform, it is not necessary to consider this point. In a regulated and monotonous diet variety of cooking should answer for the variety of food. The substances are changed by the different processes, and the digestive powers differently stimulated. The respective amounts should also be modified by climate and exposure to cold, and also with the degree of muscular work performed.

Now the broad question of the standard ration presents itself, and it is not possible to treat the subject with originality. The observations and data are carefully recorded in most books on food.

The subsistence diet—that is, the food necessary for existence—is given by Playfair:—

	Ozs.	In foot-tons.		
Albuminates -	2·	346	}	Nitrogen - 138 grains
Fats - -	·5	189		Carbon - 2,969 „
Carbohydrates -	12·	1,656		Salts - 219 „
Salts - -	·5	-		
	<hr/> 15·0	<hr/> 2,191		

water-free. Allowing for water this would represent about 25 to 30 ounces of food. Parkes thinks on this men would show signs of weakness and lose weight.

Average daily diet of men in quietude (Parkes) :—

	Ozs.	In foot-tons.		
Albuminates -	2.5	432	}	Nitrogen - 172 grains
Fats -	1.0	378		Carbon - 3,260 "
Carbohydrates -	12.0	1,656		Salts - 219 "
Salts -	.5	-		
	<u>16.0</u>	<u>2,466</u>		

This diet represents quietude; to it must be added the foot-tons necessary for productive work.

Dr. Letheby gives the following as the amounts required daily by an adult man for idleness, for ordinary labour, and for active labour :—

Daily Diet for	Nitrogenous. oz.	Carbonaceous. oz.	Carbon. grs.	Nitrogen grs.
Idleness -	2.67	19.61	} = {	180
Ordinary labour -	4.56	29.24		307
Active labour -	5.81	34.97		391

Tables from *Sanitary Record* (A. and B.) corrected :—

TABLE A.—*Ordinary Ration of the Soldier.*

Articles	Quantity taken daily in ozs. and tenths	Water	Nitrogenous substance or Albuminates	Fat	Carbo-hydrates	Salts
Meat - - -	12.00 (of which ½ is bone)	7.36	1.44	0.81	—	0.154
Bread - - -	24.00	9.60	1.92	0.36	11.81	0.312
Potatoes - -	16.00	11.84	0.32	0.02	3.36	0.024
Other Vegetables (taken as Cabbage) -	8.00	7.28	0.14	0.04	0.46	0.056
Milk - - -	3.25	2.82	0.13	0.12	0.16	0.016
Sugar - - -	1.33	0.04	-	-	0.12	0.007
Salt - - -	0.25	-	-	-	-	0.250
Coffee - - -	0.33	-	-	-	-	-
Tea - - -	0.16	-	-	-	-	-
Total Quantity -	65.32	38.78	3.95	1.35	17.08	0.819

TABLE B.—Showing the Proximate and Ultimate Constituents of Diets, their Potential Energy and their Relative Proportions.

Constituents	Moleschott		Pettenkofer and Voit		(a) Mean of Previous Two taken as a Standard		Ranke		Soldier's Rations		Mean Rations of Moleschott, Pettenkofer and Voit, and Ranke	Difference between the mean and the Soldier's Ration		Mean of Three Diets
	Water- free weight	Ratio	Water- free weight	Ratio	Water- free weight	Ratio	Water- free weight	Ratio	Water- free weight	Ratio		Actual	Per cent.	
Albuminates	Oz. 4.59	Alb.= 1.00 1.00	Oz. 4.83	Alb.= 1.00 1.00	Oz. 4.70	Alb.= 1.00 1.00	Oz. 3.52	Alb.= 1.00 1.00	Oz. 3.95	Alb.= 1.00 1.00	Alb.= 1.00 1.00	-	-	4.31
Fats	2.96	0.64	4.12	0.85	3.54	0.75	3.52	1.00	1.35	0.37	0.83	-0.46	-55	3.85
Carbohydrates	14.26	3.11	12.40	2.57	13.40	2.85	8.46	2.40	17.08	4.69	2.69	+2.00	+74	11.01
Salts	1.06	0.23	1.06	0.22	1.06	0.23	.89	0.30	0.81	0.22	0.25	-0.03	-12	1.06
Total	22.87	4.98	22.41	4.64	22.70	4.83	16.39	4.70	28.19	6.28	4.77	+1.51	+32	2.088
Nitrogen	Grains 321	-	Grains 338	-	Grains 330	-	Grains 246	-	Grains 276	-	N. to C.	Excess of C.	-	302
Total Carbon	4,737	-	4,817	-	4,777	-	4,570	-	4,588	-	-	-	-	4,708
Salts	464	-	464	-	464	-	390	-	356	-	-	-	-	430
Total potential energy in foot tons	3,878	-	4,103	-	3,990	-	3,015	-	3,542	-	-	-	-	3,665

Moleschott's ration may be taken to represent the standard average diet for a man doing a good day's work of 300 foot-tons. The soldier's diet is much below this standard, and it is a diet, in short, on which only a moderate day's work of 150 to 200 foot-tons could be demanded. Even if a quarter of a pound of meat were added to the existing ration the result would only then equal in potential energy Moleschott's calculation that is sufficient for average work.

Table B really represents the complete examination and comparison of the existing ration. At the side has been added the mean of the three standard diets. Especially attention is to be paid to Moleschott's diet and the one approaching it, marked (a), and they should be contrasted with the soldier's ration. They give about 1,700 foot-tons above the subsistence diet, and 1,500 above the rest. If there is true sympathy and co-operation of the tissues with the food supplied Helmholtz's proportion of $\frac{1}{2}$ available energy would give a good day's work, and the diets might be accepted as standards. The amount of carbon may be a little too high; the proportion of it to nitrogen, 15.1, is fairly maintained. The soldier's ration can thus be seen to be short of these standard diets by about 300 foot-tons. The amount of albuminates is too small, and the excess of carbohydrates, nearly 30 per cent., is too great a strain on the digestive system. The marked deficiency in the fats is to be noticed. In the two diets chosen for comparison the fats even are rather small. Pettenkofer and Voit's estimate is more liberal. In a later book Voit considers it better for the working man to take 12½ ounces only of carbohydrates, making up the rest, that is, about 7 ounces, with fat. In the section on the alterations in rations this subject will be resumed. In fact, the adjustment of food includes the suggestions for improvements in any permanent dietary.

	English	French	German	Austrian	United States, Active Service	Standard
Albuminates -	3.86	4.33	4.02	3.73	4.99	4.6
Fats - - -	1.30	1.27	1.09	1.64	4.09	3.0
Starches - -	17.43	18.04	19.62	17.00	15.26	14.3
Salts - - -	.81	1.00	1.50	1.0	1.23	1.1

It might be considered an addition if the peace ration of the

different European armies were given. They may afterwards be tabulated for reference. A table of their comparative constituents is appended.

The want of fats in the European rations is remarkable. The United States dietary is a liberal one, and to be recommended.

In conclusion, the estimate given in most works on physiology, and calculated from the balance of the economy, is, that man requires a diet in which the nitrogenous is to the non-nitrogenous as 1 : 4, and which may be summed up 300 grains of nitrogen and nearly 5,000 of carbon for ordinary work. For every additional foot-ton one grain of nitrogen and 16 grains of carbon should be added, and the extra work requires extra available energy in the form of albuminates and fat.

Alcohol in any form being included in a peace ration (as at Hong Kong) cannot be recommended; the amount of energy yielded by safe doses is very little, and when partaken of in doses beyond a certain amount it is certainly injurious to the body. If given as a food capable of being burned in the body it is necessary to insist on its dilution with 90 per cent. of water, or to select a compound where this condition is fulfilled, and to further advise it to be taken with the principal meal of the day.

In hot climates spirits are even more hurtful, for medical reasons which we need not give. It is doubtful whether alcohol increases mental power. Sir William Gull affirms positively that it does not. Experiments prove that more than two fluid ounces lessens the power of sustained muscular work. It was found, for instance, in the Ashantee campaign that, if taken during a march, it soon diminished vigour. The various diseases do not seem to be warded off by the use of spirits. The above remarks apply to spirits as an article of ordinary diet. It may, however, be contended that it is very useful as a restorative, even in health. At the end, for instance, of prolonged and severe exertion, either of mind or muscle, it is often useful; likewise when a person is chilled by wet. In disease there can be no doubt that spirits are frequently most beneficial. In conclusion, it is well to protest against the practice of those who, though never drunk, are continually tipping. The present fashion in soldiers of taking several times between meals a glass of beer is almost worse than getting absolutely drunk once or twice a week.

In war time, without doubt, the best beverages to work on are tea, coffee, or cocoa, and these should be supplied without stint.

SECTION III.—FOOD—ITS ADJUSTMENT IN WAR.*

If the ration of the soldier in peace is hardly sufficient to sustain the tissues of a man in moderate work, it apparently cannot meet the requirements of field service. Harassing duties, want of sleep, the trials of season and climate, long marches, camping out, anxiety and engagements with the enemy, all afford a degree of hard work unknown in garrison life. The losses of his organism are consequently greater, and to maintain the equilibrium the ration must be proportionately increased. Apart from sentiment, a man on service who is not well nourished eventually is sent to hospital, and as a fighting unit is lost to the army. When a campaign is entered upon in any country a scale of rations is fixed, and this is subject to modification according to the supplies afforded by the country itself. Provision is made for the issue of special rations in times of hard fighting or extra fatigues. As before pointed out, the increase should take place mainly in the nitrogenous and fatty elements. Fat bacon, cheese, peas, beans, and rice should be given, so as to bring up the nitrogen and carbon to the required standard.

It is not possible to make any general observations on the feeding of troops on field service without taking into consideration the uses of preserved and concentrated foods and the prevention of scurvy.

Theoretically taken into consideration the arduous duties of troops in warfare, provision should be made for a minimum of 350 to 400 foot-tons, and, if necessary, on occasions for 500 foot-tons a day:—

For work of 450 to 500 foot-tons per diem, ounces Avoir. per lb. of bodyweight					
Albuminates	-	·047	}	Nitrogen	= 450 grs.
Fats	-	·030		Carbon	= 6000 "
Carbohydrates	-	·120		Salts	= 500 "
Salts	-	·010			
<hr/>					
·207					

Equal in potential energy
to about 6,000 foot-tons.

This estimate is ample, and may be accepted as a standard of comparison. The food in time of war is not good in quality, and will hardly yield the proper amount of potential energy. A liberal allowance is more than justified.

* Diseases in war, arising from improper food, general feebleness, and increased liability to malarious fevers, dysentery, diarrhoea, &c., and productive of scurvy and scorbutic dysentery. At the battle of Solferino the Austrian soldiers were starving, and easily defeated. The Commissary-General had decamped with the treasure-chest.

[To be continued.]

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Intracranial Tumours. By BYROM BRAMWELL, M.D. Edinburgh :
Young J. Pentland. 1888. Pp. 270.

THE successful removal of intracranial tumours has completely altered the position of these growths, and has raised them from the condition of pathological curiosities to a practical importance of the very highest order. A work, therefore, on this subject from so competent a writer as Dr. Bramwell cannot fail to excite considerable interest in all branches of our profession.

Like other books by the same indefatigable author, this volume is written in clear and uninvolved language, beautifully printed on good paper, and profusely illustrated by excellent drawings. It has, therefore, not only in its matter, but in the way in which this is presented to the reader, much to recommend it, and to ensure its popularity.

In the first chapter the ætiology and general pathology of intracranial tumours is dealt with. In the second chapter the cases are divided, as regards their symptoms and clinical history, into four great groups:—1. Cases in which the presence of the tumour is not indicated by any characteristic symptoms during life; 2. Cases in which the characteristic symptoms, indicative of the presence of a tumour in some part of the intracranial cavity, are present, but in which there are no symptoms indicative of its exact site; 3. Cases in which the symptoms show not only that a tumour is present in some part of the intracranial cavity, but in which they indicate, more or less closely, its exact locality or site; 4. Cases in which there are distinct indications of derangement or disease of the intracranial contents, and in which the symptoms may be due to the presence of an intracranial tumour, but are not typical and characteristic of that condition. Each of these classes is discussed and the discussion is followed by an analysis of the important symptoms, more particularly headache, vomiting, and vertigo.

The third chapter, on the changes in the fundus oculi, contains an able critical study of the causation of optic neuritis. Four principal theories have been advanced to explain the occurrence of optic neuritis in cases of intracranial tumours. These are:— 1. The increased pressure theory; 2. The descending neuritis theory; 3. The vaso-motor irritation theory; and 4. The irritation pressure theory. This last theory—advanced by Lehr, and supported by Deutschmann—supposes that intracranial tumours, as also tuberculosis, give rise to congestion of the vessels, secretory inflammation, hydrocephalus, and increased pressure; and that the products of tissue change of those neoplasms, which become mingled with the inflammatory transudations, act as an inflammatory stimulus, and, passing with the cerebro-spinal fluid into the intervaginal space of the optic nerve, as far as the eye, give rise there to neuritis and papillitis. Dr. Bramwell thinks that, while optic neuritis is not produced always in the same way, the irritation pressure theory explains the majority of cases—that before this theory can be definitely accepted, the presence of an irritant and its exact nature must be demonstrated.

In the following chapters a detailed account is given of the symptoms as manifested by motor, sensory, and mental derangements. Here everything of importance is mentioned. Then follow two chapters on diagnosis—firstly, of the existence of a tumour; and, secondly, of its site, if present. A study of these chapters will put the reader in possession of all that can at present be made use of for the determination of these most important points. The two remaining chapters are on the pathological anatomy and pathological diagnosis, and on prognosis and treatment.

Finally, there is a chapter on the surgical treatment of intracranial tumours, by Mr. A. W. Hare.

Pneumonia: its Mortality and Treatment. A Statistical and Rational Inquiry. By HENRY HARTSHORNE, M.D. Philadelphia. 1888. Pp. 35.

IN this paper Dr. Hartshorne attempts to show that the mortality from pneumonia is now larger than it was some years ago, and is increasing. This he attributes not to an alteration in the statistical records due to improvements in diagnosis, and he rejects altogether the change of type theory. The more unfavourable results got now, he thinks, are due to the change which the treat-

ment of the disease has undergone, more particularly to the discontinuance of bleeding and other so-called antiphlogistic remedies. He analyses the statistics published in the *Medico-Chirurgical Review* for 1858, and finds that there was—

“With bleeding, either often, a few times, or once, with or without tartar emetic, altogether, 1 death in 11·1 cases.

“Without bleeding, under all treatments except with opium, 1 in 9·7.

“Large and repeated bleedings alone, 1 in 11·6.

“Bleeding a few times, or moderately, alone, 1 in 12·3.

“Bleeding and tartar emetic, 1 in 12·56.

“Tartar emetic, no bleeding, no opium, 1 in 11·3.

“Opium without bleeding, 1 in 3·3.

“Tartar emetic and opium, without bleeding, 1 in 3·8.

“Chloroform, 1 in 23·9.”

It seems to have escaped the author that within the last thirty years the treatment has undergone considerable alteration from that which was adopted when these facts were collected, and that the results which are now got are much more favourable than those just recorded.

The following is, according to Dr. Hartshorne, the “now prevailing method or theory of treatment of pneumonia:—1. The practically universal omission of venesection, and the very rare local abstraction of blood. 2. The general disuse of active cathartic medicines in the early stage. 3. By many, perhaps a majority of physicians, the early and continued use of alcohol, to the extent of from two to twelve or more fluid ounces in twenty-four hours; quinine, mostly in ten to twenty-grain doses once or twice daily; opium or morphin, from the start, averaging, perhaps, morph. sulphat., $\frac{1}{2}$ – $\frac{1}{4}$ grain every three or four hours; with deviations from or additions to this general plan by the use of antipyrin, antifebrin, aconite, digitalis, &c.; and warm applications, as poultices or cotton batting to the chest, or sometimes counter-irritation with oil of turpentine, &c.”

Now, we have very little hesitation in saying that this quotation is very far from representing the treatment of pneumonia as adopted in this city, and we can very well imagine that cases of this disease would have a better chance of their lives under the old antiphlogistic treatment than they would if drugged with alcohol and opium to the extent indicated above. Doses of 4–24 or more ounces of brandy or whiskey are very rarely given, and then only for a short time to meet special emergencies. Whenever it is possible opium

is withheld. In our opinion there are few drugs more injurious to pneumonia than opium, and on more than one occasion we have witnessed the worst consequences follow the administration of small doses, under circumstances which left no doubt on our minds that the ill-effects were due to the treatment. On referring to the statistics quoted above it will be seen that the highest mortality by far was in cases treated by opium with or without tartar emetic. We think, then, that opium should play a very small part in the treatment of pneumonia. What the belief in quinine rests on we do not know, but we think we may say that this belief is fast dying out, and is almost extinct in the minds of the younger generation of physicians.

The treatment of pneumonia among us is now one of expectancy, similar to that adopted in the other specific fevers which are known to run a definite course, with, on the whole, a tendency to recovery. The patient is carefully nursed and fed; if pain is excessive a few leeches to the side, followed by a poultice; as few drugs and as little alcohol as possible are given, while the physician is always on the alert to meet accidental irregularities in the course of the disease as best he may, on general principles. Under these conditions the course and mortality are, we believe, much more favourable than those which resulted either from the antiphlogistic or from the alcohol-opium treatment.

A Handbook of the Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I. Second Edition. London: H. K. Lewis. 1888. 8vo. Pp. 455.

MR. SWANZY must be congratulated on the very great improvement he has made in the second edition of his work. The author, in his preface, says that practically the book has been re-written, rather than revised. It has thus been brought up to date, and some imperfections in the first edition have been removed. "There is not a chapter and hardly a page which has not been emended; and, while some of the old matter has been omitted, a good deal of new matter has been introduced. The book contains 26 new illustrations." A most useful Appendix has been added, giving the Regulations as to defects of vision which disqualify candidates for admission into the Civil, Naval, and Military Government Services, and into the Mercantile Marine. The want of such a statement of the requirements of the various services has long been

felt, and Mr. Swanzy has done well to incorporate it in his new edition.

The work in its present form is an excellent handbook for students, and one which even the specialist will often refer to with advantage. It is accurate, comprehensive, and concise, and well up to date.

A Text-book of Physiology. By JOHN GRAY M'KENDRICK, M.D., LL.D., F.R.S. Including *Histology.* By PHILIPP STÖHR, M.D. In Two Volumes. Vol. I.—General Physiology. Glasgow: James Maclehose and Sons. 1888. Pp. 516.

THIS work differs in some important particulars from most text-books of physiology. It proposes to give an account not only of physiological results but also of physiological methods, and we find much more space than is usual devoted to a description of apparatus and methods of experimentation. Again, it enters much more fully than is customary into the general principles of those sciences on which physiology is based—namely, chemistry and physics. We find chapters on the general character of organic chemical substances, on the value and true meaning of chemical formulæ, and descriptions of the construction and use of the spectroscope, polariscope, microscope, and on the most important and fundamental facts of electrical science. As regards histology, the author has adopted a novel and, we think, wise course. Instead of compiling a new description of the tissues he has translated and incorporated in his book the recently published "*Lehrbuch der Histologie*" of Professor Stöhr. This work is distinguished by many good points—more particularly by the excellence of the drawings and the minute description of methods. To Stöhr's work Dr. M'Kendrick has added most valuable and suggestive chapters on the origin of the tissues and on the theories as to the physiological basis of heredity.

The chapter on the animal pigments is largely the work of Dr. MacMunn, of Wolverhampton, who is known as perhaps the most competent authority on this subject in the kingdom. Besides tables of wave lengths and much other valuable matter, Dr. MacMunn contributes a well-executed coloured plate of some of the most important pigments met with by the physiologist, including those of his recently described myohæmatin and cholo-hæmatin.

In the last section of this volume the contractile tissues are dealt with. Here we find an excellent description of the chemical

and physical characters of muscular tissue, the electrical apparatus employed in its study, and the most important apparatus used in the graphic method. The general physiology of muscle is fully treated of in several chapters, and the whole subject is well brought up to date. The final chapter of this section is on the electrical fishes. The phenomena manifested by these singular animals are described much more fully than is done in any other text-book of physiology with which we are acquainted. These phenomena, which promise to throw much light on the vital processes which occur in muscles, have recently been made the subject of elaborate researches by numerous observers. In England Mr. Gotch has greatly distinguished himself in this branch of study. We find his results given, including those presented to the Royal Society so late as last March. We also have, through Professor Sanderson's kindness, a summary of the most important results obtained by him and Mr. Gotch from their study of the electric organ in the tail of the common skate—a full account of which is not yet published.

It will be seen from this brief notice how very comprehensive this work of Dr. M'Kendrick promises to be. Its value is, we think, proportionately great. The ignorance of chemistry and physics which characterises the medical students and too many of the practitioners of the present day makes the study of physiology very difficult, and too often prevents any intelligent appreciation of the subject. The readers of Dr. M'Kendrick's work will find much of this difficulty removed, while the clearness of the style, and the abundance and excellence of the drawings cannot fail to render the work, as it deserves to be, one of the most popular text-books of physiology in our language.

An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction. By NICHOLAS SENN, M.D., Ph.D., Milwaukee. St. Louis: J. H. Chambers & Co. 1888. Reprint. Pp. 84.

MR. SENN divides his work into five sections, dealing with the following:—1. Artificial Obstruction; 2. Enterectomy; 3. Circular Enterorrhaphy; 4. Intestinal Anastomosis; 5. Conclusions drawn from his Experimental Studies.

The first section deals with the different varieties of obstruction volvulus, intussusception, &c., but does not advance our knowledge of this subject, since it is impossible to produce artificially con-

tions such as exist in obstruction due to disease. Three of the experiments detailed are brought forward as conclusive evidence—1st. That suture is admissible for lesions of the convex surface of bowel when less than half the circumference of the gut is engaged; 2nd. That suture without resection is contraindicated when the lesion implicates the mesenteric edge.

There are many cases on record proving the first, and the experiments of Madelung, with the experience of Lauenstein, Czerny, and others, have long ago shown that interference with the mesentery causes gangrene of the section of the bowel corresponding to part injured. In the absence of these proofs the three cases cited would not be sufficient data from which to draw definite conclusions like those above noted.

In the second section the experiments detailed were conducted for the purpose of determining the length of bowel that can be removed or functionally excluded without fatal impairment of digestion, and the conclusions arrived at are—(a) that even if immediately successful the removal of half the small intestine is followed by fatal marasmus; (b) that physiological exclusion of even large pieces of bowel is not so fatal as resection of similar portions; (c) that in excluded pieces of the bowel, as in ileocejunostomy, no accumulation takes place, as the peristalsis continues to be effective in the excluded portion. There are several cases recorded which support this position. We have observed two of them.

This is a valuable addition to our knowledge, as it shows that the contentions of those who argue against gastro-enterostomy are based on purely theoretical grounds.

In section 3—on Circular Enterorrhaphy—Mr. Senn calls attention to three great dangers—(a) perforation at mesenteric border; (b) the length of time required for operation; (c) the great number of sutures usually required in the Czerny-Lembert method. All three dangers were long ago commented on by Madelung, who introduced the method of guarding against the first, now referred to as original by Senn—that is, the closure of the mesentero-intestinal triangle by a suture of fine catgut. Recently, Curtis has called attention to a valuable method of carrying out the same idea.

In calling attention to the length of time required for the operation, the author says that sometimes, in order to avoid the collapse which threatens if the operation is very protracted, an artificial anus is formed instead of immediate resection and suture; but that at the present time “such an operation must be looked upon as a reproach

upon good surgery." Mr. Senn is evidently discussing the subject from a purely experimental standpoint, and while the results of operations for artificial lesions in animals otherwise healthy are exerting a powerful influence on his mind. The records of the last ten years of surgical work should convince any impartial observer that disease brings about many conditions which render the formation of an artificial anus necessary, and render fatal the most carefully and rapidly conducted resection and suture. In fact the results of after-treatment of false anus are so good that one need never hesitate to produce one if the local conditions or impending collapse contraindicate the graver operation.

The author next contrasts his invagination method with the Czerny-Lembert enterorrhaphy, but omits mention of a much shorter operation of Madelung's, in which, in order to lessen the number of sutures, discs of cartilage were used as button suture.

If Mr. Senn's method can be carried out, as he says, in ten or fifteen minutes, it is an advance which surgeons will hail with unfeigned pleasure, and apply with advantage when occasion arises, should a more extensive series of cases corroborate the results of the experiments detailed in this section. The method of completing the enterorrhaphy by omental grafting is new. Mr. Senn dissects off a piece of the omentum sufficiently long to surround the bowel at the part resected, and from $1\frac{1}{2}$ to 2 inches in width. This is retained in position by two catgut sutures, passing through the angles of the flap and the mesentery. In the few recorded cases of spontaneous cure of rupture of the stomach or intestines the omentum was found adherent over the seat of injury, and in many of the recent resection operations the omentum has been placed as a protection over the intestinal wound, with the object of favouring adhesion, but this is the first attempt at using detached portions of the omentum and suturing them to the bowel.

In the section on Intestinal Anastomosis he calls attention to a method of joining different parts of the bowel by perforated plates of decalcified bone placed within the bowel. Catgut threads passed through the plates are brought through the bowel wall at either side of a longitudinal incision. By tying the threads the serous coats of the opposing coils of intestine are kept in close contact, the central perforations in the plates allow the free passage of the intestinal contents, and when the sutures yield the plates pass away through the intestines.

In the last section Mr. Senn tabulates his conclusions. Many of

them, however, are arrived at on very insufficient data. One—No. 33—is that scarification of the serous opposed surfaces hastens the healing. This will hardly be attempted in the conditions which demand resection in the human subject. All who have carried out resection for disease know how difficult it is to arrest hæmorrhage, even from inadvertent scratches of the bowel.

On the whole, this communication is a valuable addition to the literature of this subject; but the author attempts to grapple in a short paper with too many points in this extensive field. The work will well repay perusal, more from the likelihood of its encouraging investigation than from anything it has conclusively proven.

Medical Publications. Harvard Medical School. 1887. Pp. 208.

THIS volume contains a portion only of the original work done by the teachers of the Harvard University Medical School, or under their personal supervision, during 1887. It is worthy of its source; and rarely do two hundred pages of medical literature consist so largely of the results of original research. Ten articles which have appeared in various American periodicals are here collected, and not reprinted—or even repaged—but bound together. Anatomy and physiology naturally occupy the lion's share of the collection—six articles of the ten. Two are surgical, and two medical. We have already (in our May number) noticed at some length Dr. Herbert L. Burrell's paper on the immediate treatment of fracture of the spine. The papers which (with some misgiving) we have classed as medical are Dr. T. M. Rotch's, on the "Artificial Feeding of Infants," read before the Obstetrical Society of Boston, May 28, 1887, and Dr. Harold C. Ernst's "Experimental Research upon Rabies," from the *American Journal of the Medical Sciences* for April, 1887. On these we propose to say a few words.

Many infants must be artificially fed, and many that need not be will be; and no cause of infant mortality is so prolific as injudicious artificial feeding. It is impossible, therefore, to overrate the importance of the subject which Dr. Rotch undertakes to treat. We can, of course, do no more than give a summary of his conclusions and recommend his paper to the profession, and, even more strongly, to mothers and nurses. Passing over the mechanical arrangements suggested, we find, first, rules and a table for regulating the quantity of food to be administered, based on Ssnitkin's St. Petersburg observations. He takes one-hundredth of the initial weight as the

starting-point, and adds one gram for each day of subsequent life. Thus, an infant weighing at birth 3,000 grams should take for the first ten to fifteen days, 30 grams (say 1 oz.) of milk; up to thirty days 45 grams; after 30, 60 grams. The table lays down two hours as the interval during the first week of life, with ten feedings in twenty-four hours; two and a-half hours and eight feedings up to six weeks; three hours and six feedings up to ten months. In the vast majority of cases cow's milk must be the basis of the infant's food, and Dr. Meigs' formula appears to give the closest approximation possible to the natural nutrient. He adds two parts of cream (containing 14-16 *per cent.* of fat) to one part average milk, with two parts lime-water, and three parts sugar-water (17½ drachms of milk-sugar dissolved in a pint of water). Cream separated by the centrifugal process may be taken to contain 32 *per cent.* of fat, so that it, diluted with an equal quantity of water, may be used in the preparation of the food. By mere dilution of cow's milk the casein may be reduced to digestible proportion—one per cent.—but the fat and the sugar are thereby reduced so low that the result is an acid food deficient in nutritive power. Cow's milk, modified as suggested by Dr. Meigs, is unquestionably, in the vast majority of cases, the best and most convenient substitute for human milk, and we concur with Dr. Rotch in his distrust of patent foods. For one thing, they are apt to be inconstant in composition. For instance, starch has been found in Mellin's food, although it is professed that all the starch is saccharified. A useful table is given showing an analytic comparison of human milk with "cow's milk and cow's milk modified;" and the most ordinary substitutes are discussed in detail. Condensed milk has the advantage of being sterilised, and it is easy of digestion, but insufficiently nutritious, and requires the addition of something more than water to adapt it to continuous use for infants. Of "peptonized milk"—cow's milk, of which more or less of the casein has been artificially digested with pancreatic extract and soda—we have no experience. The author of this paper does not recommend it. He thinks the baby's stomach should digest the casein for itself, and that this preparation contains too much digested casein, too little sugar, and an excess of salts.

Dr. Harold C. Ernst, Demonstrator of Bacteriology in the Medical School of Harvard University, undertook (in 1886) a series of experiments, with the view of examining the validity of Pasteur's methods in the treatment of rabies. The questions which he set

himself were three:—Is there a specific virus in the brains and cords of rabbits inoculated with Pasteur's material, and after his methods? Does the treatment by drying modify the strength of the virus? Does injection with the modified virus give immunity from the effects of virus of full strength? The inquiry was begun in disbelief, and ended in conviction. The conclusions obtained "are in complete accord with the declarations of Pasteur." In this valuable paper the experiments are described in complete detail, the material for inoculation having been obtained from two rabbits inoculated in July, 1886, in Pasteur's laboratory. The author indicates a weak point in the great Frenchman's researches as published—namely, the uncertainty as to whether the virus now used by him "is the continuation of the virus originally obtained from one child, or whether he has taken the opportunity to control the original virus, by obtaining a fresh supply from rabid animals or men coming under observation since the time his investigations first began. In other words—do all of the results which he has obtained depend for their justification upon the reality of a case occurring a number of years ago?" In a note dated Jan., 1887, Dr. Ernst mentions von Frisch's later researches, confirmatory of Pasteur's conclusions, and based upon virus obtained by himself from "street rabies."

The Altered Relations of Surgery to Medicine. Cavendish Lecture, delivered at the West London Hospital. By SIR WILLIAM STOKES, M.D., Ch.M., Univ. Dub.; F.R.C.S.I; Professor of Surgery, Royal College of Surgeons, Ireland. London: Pardon & Sons. 1888. Pp. 40.

THE Cavendish Lecture for 1888 will stand forth to all time as a remarkable example of elegant writing and inaccurate statement. The whole lecture proceeds from a misunderstanding of the difficulties that beset the progress of surgery.

The Guild of Barber Surgeons had their origin in the private barbers of the Christian bishops, who denounced the drawing of blood, and these men, being free from all knowledge of the aphorisms of Hippocrates or the teachings of Galen, were guided by experience alone. Even Ambroise Paré, who is praised by the Cavendish Lecturer, was in the employment of the Curé of Laval, whose horse he groomed, and was the son of the village barber; and when he introduced the Moslem practice of ligaturing blood-vessels, his

brethren in medicine denounced the practice, because Paré knew neither Latin nor Greek—in fact, was incapable of securing even a Galway M.A., had such existed in his days—yet Paré promoted the progress of surgery.

Equally humble was the origin of John Hunter, who made tables, chairs, and such like, to support his sister and her sick husband; and no man did more for surgery. Neither was his attention wholly given to theory, as the learned author seems to convey; he dissected the womb, for his brother William to devise the proper method for controlling after-birth bleeding. And if our readers will look to the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," published in 1793, they will find evidence of the extremely practical nature of John Hunter's studies, particularly at page 138, where the case of the coachman, forty-five years of age, is told.

Sir William Stokes has quite missed his mark. Surgery occupied an inferior position in the dark ages simply because it entailed drawing blood; and the whole clergy of Europe were opposed to such an act, and even refused permission for the dissection of a human body—and that so early as the days of Galen, who was restricted to the dissection of monkeys. Even the protection of the powerful Commonwealth of Venice could not secure Mondinus from anathema if he had dared to open the skull—the seat of the soul.

But surgeons were prompted by the love of truth and humanity, and in critical cases they followed the guidance of reason, even though they incurred obloquy and endangered their lives. Boerhaave opened pulmonary abscesses, and according to Van Swieten laid it down as an aphorism that they should be opened. Scultetus has shown by his "*Armamentarium Chirurgicum*," published in 1661 in Venice, that abdominal surgery was practised in the seventeenth century. Percivall Pott performed suprapubic section of the bladder of a boy; M'Dowell, of Kentucky, performed ovariectomy; Vesalius, O'Halloran, and Dupuytren operated on the brain before Ferriar was born; and Cheselden had excited Locke's admiration for his ophthalmic surgery, with the knowledge of which it would be unkind to the learned lecturer not to credit him.

As to antisepticism, carbolic acid may be a very good thing, though many distinguished surgeons to-day do not think so. To this, however, we raise no question; but we do object to the use of chemical antiseptics being considered as "the best and most brilliant outcome" of scientific surgery. Neither can we see why the lecturer

objects to Laennec's statement—"If the causes of severe disease are sought for in mere microscopical alterations of structure, it is impossible to avoid running into consequences the most absurd." It commends itself to us.

Sir William Stokes is an orator of no mean parts, and we can well believe that he held his audience entranced during the delivery of his lecture, to the matter, not the manner, of which we have felt bound to take exception.

Saint Thomas's Hospital Reports. New Series. Edited by Dr. GULLIVER and Mr. CLUTTON. Vol. XVI. London: J. & A. Churchill. 1887. Pp. 424.

THIS palatial hospital, which presents so imposing an appearance at the eastern end of Westminster Bridge, was opened in 1871. It contains 572 beds, 72 more than the former St. Thomas's* at London Bridge, removed to make room for railway extension. Each ward accommodates 28 patients, and has a small ward, for two beds, attached to it. In the ordinary wards 1,800 cubic feet are allotted to each bed; in the block reserved for infectious diseases, 2,500. "Of the whole accommodation of the hospital, about 180 beds are appropriated to ordinary medical cases, and 230 to ordinary surgical cases. There are also special wards for the reception of cases peculiar to women; for diseases of the eye; for venereal affections; and for children under six years of age." In 1886 4,643 were admitted, and 24,826 out-patients treated; in the Maternity Department 1,941 women were attended in their own homes. These figures show that there is ample material for the clinical instruction of the students in the medical school attached to the hospital, on which full information is given in the appendix to the present volume. The figures teach, moreover, that while specialism in medical and surgical practice is inevitable and tends to increase rather than to diminish, the multiplication of special hospitals, whether in London or nearer home, is unnecessary and undesirable. To take, in illustration, the Ophthalmic Department—we find that in 1886 3,738 out-patients were treated, and 288 in-patients admitted; 266 major operations were performed, including 58 for removal of cataract.

* The original priory and hospital were dedicated to St. Thomas the Martyr, like the former St. Thomas's Abbey and the present St. Thomas's Church in our own city. On re-founding by Edward VI., the dedication was changed to St. Thomas the Apostle.

Besides six Reports connected specially with the hospital, the volume contains fourteen other papers on various subjects, more or less interesting. In one of these Mr. Walter Edmunds and Mr. Charles A. Ballance show that, so far at least as suggestion is concerned, we have not yet reached finality in surgery. They propose to extirpate a carcinomatous bladder and divert the ureters through openings specially made, "immediately over and about half an inch behind the middle of the crests of the ilia." At present the operation has been performed only upon the human cadaver and on some unfortunate lower animals by Glück, Zeller, and Snamenskji of Moscow. The two former found that diversion of the ureters into the rectum was invariably fatal. Mr. Seymour J. Sharkey's "Cases of Hysteria and Allied Conditions, in the treatment of which Isolation, Electricity, and Massage were used," show that the Weir-Mitchell method can be very successful in carefully-selected cases; when the physician rigidly excludes—to use the author's own language—those "which he did not feel confident of succeeding with." They seem to justify his belief that, with the limitation suggested, the treatment is "one of the best additions to modern therapeutics."

The Science and Art of Surgery. By JOHN ERIC ERICHSEN, F.R.S., LL.D., Edin.; M.Ch., Royal University, Ireland; F.R.C.S., Ireland. Ninth Edition. Edited by MARCUS BECK, F.R.C.S., Eng. London: Longmans, Green, & Co. 1888.

It seems only the other day since we reviewed the eighth edition of this work; we are now called upon to refer to a new issue. In the fierce competition for public favour Mr. Erichsen's system of surgery has held its own, although it has now been thirty-five years before the profession. It has changed mightily since the first edition, but the change has been always owing to the effort to keep it "up" to the very latest advances in the science and art of surgery. The many editions which have been issued form in themselves a history of surgical progress during all these years; and it will prove an interesting occupation to compare the early volumes with those which are now before us. It is unnecessary to speak at any length regarding a work which is so well known to all English-speaking practitioners—and, indeed, to all in Europe, because it has been translated into almost every Continental tongue. We need only say that, while the great body of the volumes remains the same,

everything that is new and worth recording is recorded, and much that is old or obsolete is omitted. Erichsen's *Surgery* still holds the field as a thoroughly reliable book for practitioners and students, and as a help, to which all may turn in difficulty, to find advice or suggestion, which is always wise and accurate.

The Milroy Lectures. On Epidemic Influences. On the Epidemiological Aspects of Yellow Fever. On the Epidemiological Aspects of Cholera. By ROBERT LAWSON, LL.D.; Inspector-General of Hospitals; late President Epidemiological Society; Fellow Statistical Society. London: J. & A. Churchill. 1888. Pp. 95.

THE late Dr. Gavin Milroy bequeathed to the London College of Physicians the endowment of an annual course of lectures on State Medicine and Public Hygiene; and Dr. Robert Lawson was fittingly selected to deliver the opening course. The lectures, four in number, were delivered in February and March of this year, and are here printed in full—a valuable addition to the literature of epidemiology. Two are devoted to Epidemic Influences; Yellow Fever is the subject of the third; and Cholera of the fourth. "Epidemic influence," *alias* "epidemic constitution," *alias* "pandemic influence," is described as a conventional expression "embracing those factors which lead to the diffusion and intensification of disease from time to time, which are not referable to the individuals who suffer, or the localities in which they reside." The conclusion which the author deduces from the facts and figures given in his first lecture is "that there is a factor concerned in the production of fever which determines its appearance at points more and more to the northward in successive years; that this factor revives periodically every second year, or at some multiple of two years, passing like a series of waves over a more or less extensive portion of the earth's surface." It is impossible to summarise the evidence on which this proposition is based. Small-pox is discussed in the early portion of the second lecture; and asserted to be subject to the same pandemic law as fever. Starting at some point as an epidemic, it advances northward in successive years. India for the most part supplies the facts relating to this disease. Why the "pandemic factor" should advance northward, and why its period should be biennial, are questions which Dr. Lawson proposes for investigation, and to which he himself suggests no answer. Plague

occupies most of the remainder of the lecture. Of the lecture on Yellow Fever we shall only remark that the characteristics of the disease are well described (p. 53); that, according to Dr. Lawson, it "is met with not only in the continued form, but also as a remittent, and from time to time even as an intermittent;" and that, in his opinion, importation or contagion is not a necessary condition of the development of an epidemic. Even the Lisbon epidemic of 1856 and the following year "arose" not from contagion from without but from the extension of a pandemic wave. This view is supported by Dr. Lyons in his report on the Lisbon epidemic.

These opinions of the lecturer on yellow fever prepare us to find him non-contagionist in his teaching on cholera. Instances which he cites "show conclusively that malignant cholera may spring up in a locality far removed from the place where it is epidemic, without being introduced by persons labouring under it" (p. 83). It is needless to mention that the conclusive instances are cases in which importation could not be traced. One instance showing, with the highest probability of which the circumstances admit, that an epidemic was due to an imported case outweighs in demonstrative power fifty cases in which importation could not be detected. The evidence of the one witness who saw the prisoner steal the spade rightly prevailed over that of the score who did *not* see the theft committed. In a recent case a certain suit of tweeds "arose" in a prison-ward. The most careful inquiry failed to establish importation. Was it imported, nevertheless? or was it simply a result of a "pandemic wave?"

NOTE ON ANATOMY AND PHYSIOLOGY OF THE PHRENIC NERVE IN MAN.

MR. WAGSTAFFE calls attention to the frequent branch from the phrenic nerve for the supply of the anterior scalenus muscle. He thinks this shows that the scaleni and the diaphragm are intimately associated in their action as respiratory muscles.—*St. Thomas's Hosp. Reports*, XVI.

VAGINITIS.

THE *Allgemeine med. Central-Zeitung* says that Prof. Ball obtains successful results in acute vaginitis from suppositories of oil of copaiba and cocoa butter, each one drachm; and opium one-half grain. These may be allowed to stay in the vagina for twelve hours.—*Philadelphia Med. and Surg. Reporter*, March 12th, 1888.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.*

By SIR CHARLES A. CAMERON, Ex-President and Professor of Hygiene and Chemistry, R.C.S.; President of the Public Health Medical Society (London); Vice-President, Institute of Chemistry of Great Britain; Examiner in Sanitary Science, Cambridge and the Royal Universities.

HYGIENE AT THE MEDICAL FACULTIES.

DR. A. LOEWENTHAL, Professor at the Academy of Lausanne, has recently published^b an interesting *brochure* giving an account of the teaching of hygiene in the medical schools of Europe. The following is a synopsis of this pamphlet:—

Austria.—In the University of Gratz the students of medicine numbered, in 1885–86, 429. In that year the Professor of Legal Medicine, Dr. Schauenstein, announced that he would lecture five times a week on public hygiene and sanitary laws, but no pupils presented themselves, and the lectures were not delivered. Some lectures on food and professional hygiene, announced by Professor Extraordinary Gruber, proved abortive for want of an audience. A three weeks' practical course on culture of organisms attracted three pupils. Two practical courses on hygiene were each attended by six pupils. In the summer of 1886 Professor Schauenstein gave a course of lectures on State Medicine to five students; and several other hygienic courses fell through, owing to no students having presented themselves.

In Innsbruck the medical students numbered, in 1885–86, 202. No professors seem to exist there for instruction in hygiene.

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

^b L'Enseignement Actuel de l'Hygiène dans les Facultés de Médecine en Europe. Paris: H. Le Soudier.

There are two faculties in the University of Prague—the German and the Czeches. In the former there is an Extraordinary Professor of Hygiene, Dr. Soyka. In the winter session, 1885–86, he lectured thrice a week to eight pupils, the students of medicine numbering 481. Practical instruction was given in the laboratory to a class composed of a single individual! Bacteriological studies attracted four inquirers. In the summer session eight students attended lectures and two practical instruction. Some instruction was given in bacteriology by the Professor of Pathological Anatomy and Pharmacology. In the Czeches Faculty no provision seems to have been made for teaching hygiene.

In 1886 there were 2,307 students of medicine in the University of Vienna. The Chair of Hygiene is vacant since the death of its last occupant, and no lectures on the subject were given in 1885–86. On the whole, but little attention seems to be devoted to hygienic teaching in Austria.

Belgium.—In Belgium hygiene enters into the primary examination for the degree of M.D.

In the University of Ghent a Chair of Hygiene was instituted six years ago, and is occupied by Dr. Van Ermengem. He lectures thrice weekly in his first course, and in a second course gives instruction one hour and a half per week in bacteriology. There were in 1885–86 only 70 students of medicine in this University, of whom from 20 to 30 attended Dr. Ermengem's courses. In 1886 an Institute of Hygiene and Bacteriology was established in Ghent.

In Liège University Dr. Putzeys is Professor of Hygiene. There were in 1885–86 165 persons studying medicine in this University, and of these 35 attended the course on hygiene. There is a small hygienic laboratory in Liège, which is insufficient for teaching purposes.

Of Brussels University we have but scanty information. Dr. E. De Smet lectures on hygiene, and a Privatdocent gives instruction on bacteriology.

Of Louvain University no account is given.

Denmark.—There are 200 medical students in Copenhagen. There is no Chair of Hygiene, but instruction on the subject is given by Dr. C. G. Godeken, Professor of Medical Jurisprudence. From 30 to 36 students attend the course.

France.—The six medical faculties of France one and all possess a Chair of Hygiene. In Bordeaux the Professor, Dr. Layet, is an eminent sanitarian. He has a well-appointed laboratory. Dr. Loewenthal does not, however, give any statistical information in reference to Bordeaux.

At Lille the Chair of Hygiene is in possession of Dr. Arnould. He lectures three times a week during the session to a class varying from 10 to 20. There are about 100 students of medicine.

At Lyons Professor Rollet lectures to a class of from 20 to 30, out of the 712 medical students (in 1885–86). The courses are comprehensive, and extend through two years. There is not for the use of students a special laboratory.

Montpellier is famous in the history of French medical science. The Professor of Hygiene in its medical faculty is Dr. Bertin-Sans. His course extends over two years, and is very comprehensive. There is a museum and laboratory of hygiene—the most complete in France. There are about 400 students in the faculty, and about 50 of them study hygiene specially.

At Nancy hygiene is taught by Professor Poincaré. The course is confined to an *Annus medicus*, and is attended by from 20 to 30 students. There are about 100 studying medicine in this faculty.

The Chair of Hygiene at Paris is ably filled by Professor Proust. He lectures three times a week in summer. His courses, which vary somewhat from year to year, are attended by about 300 pupils, out of the 4,000 in the faculty. It is only quite recently that a hygienic laboratory has been established in connection with the faculty.

In the French medical schools hygiene is not lost sight of. In that of Algiers it is taught by a special professor, Dr. Sésary. About 20 of the students of the school attend his lectures.

At the medical school of Besançon Dr. Chenevier is Professor of Hygiene and Therapeutics.

At Rheims, Dijon, Marseilles, and Grenoble medical schools, hygiene is combined with some other subject, such as legal medicine. In none of these schools is there a special hygienic laboratory, but the teachers of hygiene in France make it a point to take their pupils with them to inspect public buildings—such as hospitals and manufactories—dwellings, &c.

Germany.—The celebrated bacteriologist, Dr. R. Koch, is Professor of Hygiene in the University of Berlin. Instruction in

this subject is given in the Institute and Museum of Hygiene. The principal course extends over two sessions of six months' duration, and occupies three hours weekly. The subjects treated upon in the course in 1885-86 were as follows:—1st Session—Air (including climatology), water, soils, micro-organisms, infective diseases, and disinfection; 2nd Session—Clothing, dwellings (including heating, ventilation, and disposal of effete matter), hospitals, prisons, and other public institutions, school and professional hygiene, food and diet. The numbers of students attending the two courses were 54 and 35. In 1885 there were 1,305 medical students in Berlin. Every winter Professor Koch gives a gratuitous and public course of lectures on bacteriology. He also superintends the classes in practical hygiene. About 80 students attend these classes: they work 6 or 7 hours daily for a month; 8 or 9 students are always engaged in special investigations. The Privatdocent Wolffhügel, and the chemist Proskauer, conduct a class of pupils which, in 1886, numbered five. The following professors treat upon various hygienic subjects in their courses:—Dr. A. Hirsch, Professor of Pathology; Dr. Lewin, Professor of *Materia Medica* and Toxicology; and the Privatdocenten, Dr. Skrzeczka, Wolff, Baginsky, and Herter.

At Bonn there is no regular Chair of Hygiene, but Extraordinary Professor Finkelnburg gives a course of lectures upon the subject. Only 9 students attended the course in 1886. Professor Finkelnburg also gives a course of lectures on psychiatrics, which in 1886 was attended by 19 students. Privatdocent Wolffberg lectures gratis for an hour per week on the prophylaxis of the infective diseases; he also gives instruction in the examination of potable waters. In 1886 there were 267 medical students in Bonn.

In 1886 there was no Chair of Hygiene in Breslau, but one was about to be established. Cohn, the eminent oculist, lectures gratis on the hygiene of the eyes once a week. Extraordinary Professor Gscheidlen lectures on food and its adulterations, diet, exercise, and some other subjects relating to health. Extraordinary Professor Hirt gives some lectures on public hygiene, as do also Extraordinary Professors Soltmann and Neisser, and Privatdocent Jacobi—all are free to the medical students of the University, who in 1886 numbered 375.

There is no separate Chair of Hygiene in the University of Erlangen. Dr. Rosenthal, Professor of Physiology, gives, in the winter, four lectures weekly on public and private hygiene. In

the winter of 1885 these lectures were attended by 36 of the 225 medical students of the University. During the summer session of 1886 a few students studied practical hygiene in the physiological laboratory.

There is no special Chair of Hygiene in Fribourg University, in which, in 1885-86, there were 389 students of medicine. Dr. Maier, Professor of Pathological Anatomy, gives a comprehensive course of lectures on hygiene. The number of pupils attending in 1886 was 57. Dr. Schottelius, Extraordinary Professor of Pathological Anatomy, treats upon bacteriology. In the winter of 1885 Privatdocent Fritsch lectured on public hygiene; and in the summer of 1886 on sanitary police.

In 1886 there were 145 medical students in Giessen. Dr. Wilbrandt, one of the professors, gives a few lectures on hygiene and sanitary police.

In Göttingen University, with, in 1886, its 206 medical students, Dr. Flügge, Professor of Medical Chemistry, treats of hygiene in a course of lectures occupying three hours per week.

At Greifswald there is no Chair of Hygiene, but Privatdocent Beumer gives some instruction on the subject. In 1885-86 his practical class numbered 24, whilst 47 out of 399 of the medical students were present at his lectures. Dr. Haeckermann, Extraordinary Professor of Medical Jurisprudence, treats of hygienic subjects as part of his course.

At Halle the Professor of Pharmacology and Medical Chemistry, Dr. Harnack, gives an elaborate course on hygiene. In 1885-86 his class numbered 30, out of a total of 280 medical students of the University—Professor Eberth lecturing on bacteriology.

In Heidelberg, Dr. Knauff, Professor of Legal Medicine, gives some lectures on public hygiene and bacteriology; 205 medical students were entered in this University in 1885-86.

Thirty of the 193 medical students of the University of Jena attended, in 1885-86, a course of lectures on hygiene, delivered by Dr. Fürbringer, Professor of Dermatology. There were two lectures per week. Another course was given by Dr. Gärtner; it comprised three lectures weekly, and was attended by 43 students.

Kiel University does not possess a Chair of Hygiene; but a very extended course on this subject is given by Extraordinary Professor Bockendahl, which, in 1885-86, was attended by 25 of the 197 medical students of the University.

In Königsberg University there were, in 1885-86, 241 medical

students. A few lectures are given, gratis, by the Professor of Legal Medicine (Dr. Pincus), the Extraordinary Professor of Anatomy (Dr. Baumgarten), and Privatdocent Petruschky.

The oldest Chair of Hygiene in Germany, except that of Munich, is that of the University of Leipzig, which is occupied by Dr. Hofmann, a former pupil of Pettenkofer. In the winter he lectures four times weekly, on alimentation and all that relates to it, to a class which, in 1886-87, numbered 74. There are also discussions upon some of the principal questions, which last one hour and a half, and at which, in 1886-87, 66 pupils were present. No fee is charged for attendance at these discussions,

In the summer session there is another course, with demonstrations in the Institute of Hygiene. In 1886, 101 students attended this course, out of a total of 742 entered in the University. The Professor of Medical Jurisprudence and the Extraordinary Professor of Pathology and Anatomy, and Privatdocent Friedländer, give some instruction in hygiene and bacteriology.

In Marburg University, in which, in 1885-86, there were 268 medical students, Extraordinary Professor Rubner gives some instruction (mostly gratuitously) in hygiene.

In Munich we find the oldest Chair of Hygiene in Germany worthily filled by the illustrious Pettenkofer. His principal course is given in summer, and comprises five lectures weekly. The following are the subjects:—Air, animal heat, clothing, habitations (comprising heating, ventilation, lighting, drainage, water supply, &c.), food, water, soil, infectious maladies, disinfection, disposal of the dead. Dr. von Voit, Professor of Physiology, lectures on alimentation; and Privatdocent Emmerich demonstrates on the examination of foods. Privatdocent Renk taught practical hygiene (eight hours weekly) to, in 1885-86, 30 pupils, and public hygiene (three hours per week) to 20 students. Privatdocent Messerer treats upon sanitary laws; Extraordinary Professor Martin on police medical administration; Dr. Bollinger (Professor of Pathological Anatomy); and Privatdocenten Buchner and Emmerich teach bacteriology.

In this great University there were, in 1886, 1,225 students of medicine. In 1886 111 persons attended Professor Pettenkofer's course. They comprised 15 medical men, 15 architects, and 80 students of medicine.

There are only 106 medical students in Rostock University, and to such of them as attend, Dr. Uffelmann, Professor of Pediatrics, gives some lectures on hygienic subjects.

In 1886 there were 210 persons studying medicine in Strasburg University. The eminent Professor of Medical Chemistry, Dr. Hoppe-Seyler, gives a summer course of lectures on hygiene; the lectures are delivered thrice weekly. In winter some students take out a practical course in his laboratory. A few lectures on certain hygienic subjects are given gratis by the Professor of Pharmacology.

In Tübingen Dr. Cesterlen, the Professor of Medical Jurisprudence, gives a course of lectures on hygiene in the winter. Three lectures weekly are given, and in 1885-86 were attended by 30 out of a total of 197 medical students.

In Würzburg Dr. Geigel, Professor of Pediatrics, gives a gratuitous course of lectures, two per week, on public hygiene. In the pharmacological laboratory some instruction in hygienic chemistry is given by Dr. Kunkel. He also gives gratuitously some lectures on dietetics.

Greece.—In the medical faculty, Athens, hygiene is taught by Privatdocent Bambas; and it is rather remarkable to find 200 Greek students studying this subject. In Athens the medical students numbered, in 1885-86, 858. Greece evidently supplies physicians to other countries.

Holland.—Professor Forster, a very eminent author, is occupant of the Chair of Hygiene in the University of Amsterdam. His course is an annual one—an hour daily during the winter session and one hour weekly during the summer session. From 45 to 50 students attend it. There are about 400 in the university. There is an Institute of Hygiene, under the direction of Dr. Forster, in which, in 1885-86, 36 students worked.

In Groningen University hygiene is combined for teaching purposes with pharmacology, and the combined chair is occupied by Dr. Fokker. The course occupies three hours per week during the session, and is attended by 17 students (in 1885-86) out of a total of 170; 18 pupils worked in a hygienic and bacteriological laboratory.

In Leyden, of electrical fame, Dr. MacGillavrij teaches hygiene, general pathology, and pathological and histological anatomy. He devotes to the first of those subjects one hour per week during the scholastic year. His class averages 70, out of an average medical class of nearly 300. In 1885 a hygienic laboratory was constructed.

Dr. Overbeek de Meijer is Professor of Hygiene in the University of Utrecht. His pupils number from 45 to 50. The medical students of Utrecht vary from 200 to 230. There is a hygienic laboratory, which is well fitted up.

Hungary.—In Buda-Pesth University there is a Chair of Hygiene, the duties of which are discharged by Professor Fodor. He lectures in summer, five hours a week, to a class which in 1886 numbered 203 of the 1,096 medical students of the university. In winter a course of lectures on epidemic diseases is given gratis. In 1886, 9 pupils worked in the professor's laboratory.

In Klausenburg Dr. Rozsahegyi is Professor of Hygiene, and in 1885–86 his class numbered as follows:—In the laboratory, for six hours a week, 37; instruction in sanitary police, three hours weekly, 13; veterinary hygiene, twelve hours per week, 12. There were some other classes for professors of hygiene in schools, &c. In 1885–86, 109 persons were studying medicine in this university. In Hungary the Medical Inspectors of Schools are obliged to procure a diploma certifying that they are "Professors of Hygiene, qualified for Secondary Schools." This fact accounts for the large number of students studying hygiene in Hungary, whilst in the sister country, Austria, so little attention is given to this subject.

Italy.—In the ancient University of Bologna Dr. Roncati is Professor of Hygiene. He gives a course of lectures, occupying three hours daily, during the medical year. In 1885–86 it was attended by 97 of the Bologna medical students. There is no hygienic laboratory in this university.

In Catano, Dr. Ardini is Professor of Hygiene and Legal Medicine. The students number about 100, and about a dozen attend Professor Ardini's course.

In Genoa, Dr. Raimondi lectures on hygiene and medical jurisprudence.

In Padua, Dr. Panizza is Professor of Hygiene, and in 1885–86 had 46 of the 302 medical students of this university attending his lectures.

In Pavia, Dr. Sormani is Professor of Hygiene, and gives very elaborate courses of lectures. In 1886–87 his class totted 74, the total number of students being 432. He has a hygienic laboratory, which is supported by State aid.

In Sassari, the Chair of Hygiene is vacant. About 60 persons

study medicine in this little university, and about 10 per cent. of them take out the course on hygiene.

In Turin Dr. Pagliani is Professor of Hygiene and gives full courses of instruction to a class which in 1885-86 numbered 118, out of 669 students, some of whom, however, were studying pharmacy and veterinary medicine. The small hygienic laboratory is to be replaced by a larger one.

There are, we think, 16 universities in Italy, but of 11 of these Dr. Rosenthal makes no mention—probably there are no medical faculties in some of them.

Roumania.—There is a Chair of Hygiene in Bucharest, which is filled by Professor Félix. His course is a comprehensive one. In 1885-86 it was attended by 33 medical students, out of a total of 186, and 25 pharmaceutical students.

Russia.—In Dorpat University Dr. Koerber, Professor of Medical Jurisprudence, lectures regularly on hygiene five days a week in the winter session of the medical year; 94 students, out of a total of 743, attended his course in 1885-86.

In Kazan Dr. Jacoby is Professor of Hygiene. He lectures four hours weekly in the *Annus medicus* to a class (in 1885-86) of 75, out of the 481 pupils of the university. He is provided with a laboratory and assistant.

In Kharkov Dr. Skortzow is the occupant of the Chair of Hygiene. The chair is an important one, and the hygiene class numbers sometimes 230 out of a total of about 900 pupils. There is a hygienic laboratory here.

In Moscow Professor Erismann teaches hygiene exclusively and fully. He has a well-appointed laboratory, with accommodation for 56 students. About 250 of the 1,200 students of this university study hygiene.

Dr. Dobroslavine, Professor of Hygiene in the West Petersburg Military Academy of Medicine, has a class of about 80.

In Warsaw there is a Professor of Hygiene—Dr. Kapoustine. His class numbered 139 in 1885-6. There were in those years 522 medical students in Warsaw, and 30 of them were in the hygienic laboratory.

Spain.—There are nine medical faculties in Spain. In Barcelona there is a Chair of Hygiene, occupied by Dr. Rodriguez Mendez. His course lasts eight months, and occupies nine hours weekly.

In reference to public hygiene, the subject matter varies from year to year. From 40 to 50 students attend Dr. Mendez's courses. The medical students in Barcelona numbered in 1885-86 about 400.

In Granada University Dr. Rafaël Branchat is Professor of Hygiene. His course occupies an hour and a half per day during the *Annus medicus*. In 1885-86 the medical students numbered about 150, of whom 13 attended the course on private hygiene, and 16 that on public hygiene.

Professor Gomez Reiz occupies the Chair of Hygiene in the University of Valencia, in which, in 1885-86, there were about 400 students of medicine. The instruction in hygiene resembles that in Barcelona, and is attended by about 32 persons.

Sweden.—In this country there are two Universities and three Schools of Medicine. There is a Chair of Hygiene in the Medico-Chirurgical Institute of Stockholm, but there are no such Chairs in connection with the Medical Faculties of the Universities of Lund and Upsala. In Sweden the period of medical study before graduation is six years, and before the candidate enters upon his six years' period of professional studies he must pass an examination in natural history and other sciences, in preparing for which he usually passes two or three years. It is clear that the student has ample time to study hygiene, though, but little provision for teaching it exists in the Swedish Medical Schools.

In the University of Lund Dr. Bendz lectures on medical jurisprudence, pathological anatomy, and State Medicine. In Upsala University Professor Hedenius lectures on general pathology, pathological anatomy, and public health. In neither University is any special instruction worth speaking of given to pupils.

Professor Heyman lectures on hygiene in the Medico-Chirurgical Institute, Stockholm. The course, which is not very comprehensive, occupies four hours weekly during the medical year, and is attended by from 5 to ten out of the 300 to 350 pupils of the Institute. There is a hygienic laboratory and museum.

Switzerland.—There are four Universities—Bâle, Berne, Geneva, and Zurich—and two Academies in Switzerland; all of the former and one (Lausanne) of the latter possess Medical Faculties. In Bâle instruction in Public Hygiene is given by Privatdocent Göttsheim. He had, in 1885-86, 11 pupils; the total number studying medicine being 121.

At Berne Dr. Vogt is Professor of Hygiene. He has no laboratory and no pupils. Some instruction in certain hygienic subjects is given by the Professors of Medical Jurisprudence and Medical Chemistry. There are about 198 medical students at Berne.

Professor Dunant is supposed to lecture on hygiene at Geneva; but no pupils present themselves, although in 1885-86 there were 121 in the University.

At Lausanne Academy the Chair of Hygiene is filled by Dr. Dufour. He gives, in summer, a course comprising one lecture weekly. Dr. Loewenthal gives a free course on hygiene in the winter. There were, in 1886, only 17 medical students in this institution; a few of them attended the hygienic courses.

At Zurich there is no special Chair of Hygiene, but some instruction on the subject is regularly given by Professor Wyss. In 1886 14 students (there were 216 in the University) attended Professor Wyss' lectures. Dr. Klebs, Professor of Pathology, gives instruction in bacteriology. There is a hygienic laboratory recently constructed.

Dr. Loewenthal gives but meagre information in reference to the teaching of hygiene in Great Britain—the home of State Medicine; nor does he refer at all to the Chair of Hygiene of the Royal College of Surgeons in Ireland, which is almost, if not actually, the oldest Chair of Hygiene in Europe. It is not necessary here to treat of the means afforded in British Medical Schools for the study of State Medicine.

VITAL AND MEDICAL STATISTICS IN RUSSIA.

A publication entitled "Annual Statistics of the Empire of Russia, 1884-1885," published in 1887 at St. Petersburg, has come into our hands. We gather from it that the population of the Empire at that time was 108,787,235. It is unusual to find the males in a population more numerous than the females; but this is the case in Russia, where the females number 53,888,042, whilst the males tot up 54,063,353. The inhabitants of the towns comprise 7,280,037 males, and 6,614,592 females; total, 13,947,825. In Great Britain and Ireland, with a population only one-third that of Russia, there are more people living in towns.

In 1885 the births of 2,365,278 males and 2,232,163 females (total, 4,597,441) were recorded, of whom 66,152 males and 63,548 females were illegitimate. The deaths numbered 3,291,824. Of the deceased, 1,702,791 were males and 1,589,033 were females.

If the above figures be correct, the increase of population by excess of births over deaths amounted, in 1885, to 1,305,617.

In the period 1867-1871, the births numbered annually 3,187,792 and the deaths 2,404,726; in 1871-1876, the number of births averaged annually 3,478,670 and the deaths 2,476,428; in 1877-1881 the mean annual number of births was 3,572,245 and of deaths 2,596,840.

During the period 1877-1881, there were annually born 73,513 twins (37,114 males and 36,399 females), 1,086 triplets (561 males and 525 females), and 24 quadruples (11 males and 13 females).

Average deaths, arranged according to age, in the period 1877-1881:—

Under One Month		1 to 3 Months		3 to 6 Months		6 to 12 Months	
Males	Females	Males	Females	Males	Females	Males	Females
125,171	98,699	101,753	84,184	103,418	85,315	131,968	119,383
1 to 2 Years		2 to 5 Years		5 to 10 Years		10 to 15 Years	
Males	Females	Males	Females	Males	Females	Males	Females
116,548	109,929	132,930	127,673	58,430	56,052	21,261	20,572
15 to 20 Years		20 to 35 Years		35 to 55 Years		55 to 80 Years	
Males	Females	Males	Females	Males	Females	Males	Females
20,848	21,877	68,348	71,511	116,881	114,978	162,838	170,113
Over 80 Years				Total			
Males		Females		Males		Females	
17,903		17,426		1,117,846		1,097,912	

In 1885 the sudden deaths numbered 42,946, of which 6,230 occurred in the towns. Of these deaths 3,450 (2,616 of men and 834 of women) were caused by murder, and 2,494 (1,871 males and 523 females) by suicide.

The cases of, and deaths from, the following diseases occurred in 1884:—

Typhus Fever		Enteric Fever		Intermittent Fever	
Cases	Deaths	Cases	Deaths	Cases	Deaths
29,858	2,827	70,451	7,612	28,458	1,665
Ill-defined Fevers		(Total Fevers)		Smallpox	
Cases	Deaths	Cases	Deaths	Cases	Deaths
24,792	2,079	153,559	14,183	56,744	11,506
Scarlet Fever		Diphtheria		Measles	
Cases	Deaths	Cases	Deaths	Cases	Deaths
46,705	8,505	55,494	19,326	85,394	8,024
Whooping Cough		Dysentery		Cholera Nostris	
Cases	Deaths	Cases	Deaths	Cases	Deaths
75,584	2,123	56	611,593	895	28

The total number of cases of all kinds of zymotic diseases in 1884 was 644,274, and 77,488 of them proved fatal. In 1883 the numbers were 589,274, and 86,229.

In 1884 there were in the cities of Russia 867 hospitals, containing 47,143 beds, and in the villiages 800 hospitals, provided with 10,682 beds; total, 1,687 hospitals, containing 57,825 beds. In

addition to these there were 77 hospitals, containing 8,584 beds, for foreigners.

The cases of illness registered numbered 11,320,707, of which 399,951 were syphilitic; 2,300,404 persons were vaccinated. There were registered in Russia in 1884, 5,302 public medical men, 7,653 *officiers de santé* (low grade practitioner), and 3,170 midwives.

The students of medicine in the 8 Universities numbered, in 1884, 4,459.

CHOLERA IN JAPAN.

We have received, through the kindness of Mr. Nagayo Sensai, Director of the Central Sanitary Bureau, Home Department of Japan, a brief review of the operations of the Home Department in connection with the cholera epidemic of the 19th year of Meiji (1886). We learn from this official publication that the epidemic of 1886 was the most violent and malignant since 1879, there being no fewer than 155,574 cases, of which 110,086 were fatal. The disease raged during 348 days of the year, and spread over the whole country. It would seem that the epidemic arose from cholera germs, which had lain dormant in Osaka the preceding year. The disease was imported into that city from Nagasaki; and although it had nearly disappeared during the winter of 1885, cases occurred occasionally, until in the spring the malady assumed an epidemic form. Osaka was never so severely visited by cholera, for there were 99 days in each of which the number of cases reported exceeded 100, and on each of 4 days 200 cases occurred. The situation of the city favours the spread of the disease, for the water of the river Yodo is conducted through it by numerous canals, which, though supplying so-called potable water to the inhabitants, also receives in return their sewage! The wells, too, being on a level with the canals, freely communicate with each other, and thus the offensive matters from the drains find their way into the wells. The authorities adopted the precautions of inspection and disinfection, notwithstanding which the disease raged everywhere—a fact attributed to the impurity of the drinking-water and the filthy state of the country.

In 1886 the population of Japan was 38,276,376, occupying 7,727,610 houses. The disease appeared in 119,182 houses.

The following were the principal measures taken by the authorities to stay the ravages of the disease:—Inspection of vessels arriving from infected ports; a limited quarantine; quarantine

hospitals; immediate cremation of the bodies of the persons who died from cholera; disinfection upon a large scale; prohibition of the exportation of rags and old clothing; appointment of medical inspectors and sanitary police; cleansing of privies, drains, ditches, &c.; prohibition of all public religious celebrations, orations, preaching, and popular amusements; inspection of food, and destruction of such as was likely to cause diarrhœa, &c.; prohibition of the sale of certain articles of food likely to induce the disease; destruction by fire of choleraic discharges; removal of barrels or boxes used for the reception of such refuse as the intestines of fish to distant regions; in many instances the schools were closed. Those who carried the coffins of the cholera victims and those who removed the infected discharges from the patients were provided with places in which they could fumigate and cleanse their bodies and clothes. Local committees of intelligent or responsible persons were formed in many towns, and were entrusted with the supervision of from ten to twenty houses, the inhabitants of which were required to follow the advice of the committees. Sanitary inspectors were sent into the populous villages to instruct the inhabitants as to the measures necessary for protecting themselves against cholera.

On the whole, the authorities seem to have laboured hard to lessen the ravages of cholera in Japan; and, if they were not so active, it is probable that the mortality caused by the disease, great as it was, would have been still greater.

ACUTE DIARRHŒA IN CHILDREN.

The ætiology of acute diarrhœa in children is discussed by Dr. A. Siebert in a paper published in *New York Medical Record* for March, 1888. In America infantile diarrhœa is usually supposed to be greatly influenced by temperature—the hotter the weather, the greater the amount of infantile diarrhœa. Dr. Siebert is of opinion that heat is not the most serious factor in producing the high mortality amongst children so common in America. For example, he found that in July, 1881, the mean temperature was 80° F., that of August 82°, and that of September 81°, yet there were treated in the fever hospital with which Dr. Siebert is connected 290 cases of infantile diarrhœa in July, 223 in August, and 137 in September. In other years he had noticed that in July, with a lower temperature than August or September, the mortality caused by diarrhœa was much greater.

Dr. Siebert also investigated the alleged influence of hot, moist

weather on the disease, but failed to detect any; nor could he discover that the disease was affected by the force or direction of the wind, or by the rainfall. Dr. Siebert did, however, find that certain meteorological conditions did affect the disease. He seems to have ascertained that the maximal morbidity and mortality depended upon the minimal daily temperature. So soon as the daily minimal temperature rises above 60° F., and continues so for a few days, there is a marked increase in the number of cases of gastrointestinal catarrh. If for more than a week the temperature remains above 60°, then cholera infantum is pretty sure to become epidemic.

There is strong evidence that diarrhoea belongs to the group of diseases produced by the introduction of micro-organisms into the system. In the *Medical Record*, New York, September 10, 1887, Dr. W. D. Booker, of John Hopkins University, states that he has isolated no fewer than twelve distinct kinds of bacteria from the dejecta of children suffering from diarrhoea—one of these was a coccus, and the others were bacilli; two of the latter possessed the power of liquefying gelatine, and several of them affected milk in various ways. It is very likely that the organisms developed in milk cause much of the diarrhoea of infancy, as the albumen of milk readily undergoes putrefactive changes. Dr. Siebert quotes some observations made by other persons, tending to show that the fermentation of milk begins at 60° F.; also that when a certain water (that is, Croton Lake) was heated to 60° F., it acquired a peculiar flavour, due no doubt to the development of organisms in it. It is not unlikely that organic matter kept for some time at a temperature always above 60° F. may generate by fermentation many noxious substances, some of which may be carried by evaporation of water or evolution of gas into the air. Dr. Tomkins found the air of Leicester—noted above all towns in England for its high death-rate from infantile diarrhoea—crowded with micro-organisms; they varied from 2,000 to upwards of 6,000 per centimetre of air. These organisms were proved to be noxious by their power to liquefy nutrient gelatine, and they developed in the gelatine a most offensive odour.

A PECULIAR FEBRILE DISEASE.

Dr. James B. Russell, the able medical Officer of Health for Glasgow, has published in pamphlet form an account of a peculiar outbreak of febrile disease in St. Mary's Roman Catholic Industrial School for boys, Glasgow. It occurred in March, 1888, and out of

a total number of 207 boys, 66 were affected; 2 girls employed in the kitchen were also affected. In four instances the disease proved fatal. A *post-mortem* examination of the bodies of two of the deceased was made by Dr. Joseph Coates, Pathologist to the Western Infirmary, with the following results:—

“Dennis M’Guire, aged 11 years; died 7th March, at 8 p.m., after 3 hours of acknowledged illness.

“Rigor mortis well developed.

“Arms, lateral aspects of chest and neck present a livid colour, very deep on left ear; very little lividity of lower limbs.

“Brain shows a certain dryness of the surface, but there is no hyperæmia of membranes and no exudation. The ventricles are not distended and the brain substance is of normal consistence.

“Heart. The blood in heart and body generally is perfectly fluid. The heart itself is normal.

“Right Lung firmly adherent, and there are some old condensations at apex; at root of lung some enlarged and slightly caseous glands.

“Left Lung non-adherent and otherwise normal. There is no condensation in either lung.

“Right Kidney extremely hyperæmic.

“Left Kidney, similar.

“The Bladder is greatly distended with urine, fundus reaching above umbilicus.

“The Liver presents nothing remarkable.

“The Spleen is considerably enlarged and hyperæmic. The Malpighian bodies are remarkably prominent.

“In the lower part of *small intestine* there is a distinct, but not very considerable enlargement of solitary follicles and Peyer’s patches. There is no special hyperæmia of them.

“Mesenteric glands are distinctly enlarged and slightly red. No degeneration or sign of tubercular lesion.

“Bernard M’Kenna, aged 14 years; died at 6 15 a.m. on the 8th, having gone to bed apparently well, and been found dying when the boys were being awaked half an hour previously.

“Rigor mortis well developed.

“Bluish colour over entire posterior aspect of body and on right lateral aspect of trunk and lower limb. There is also a blue mottling over the lateral aspects of trunk and neck.

“Brain. Membranes present a moderate degree of injection, but there is no exudation, and the brain in general is normal in appearance.

“Heart. The blood in heart is partly coagulated; heart normal.

“Both Lungs are somewhat adherent, but otherwise normal in appearance.

"*Spleen* is somewhat enlarged, but not markedly hyperæmic. The *Malignant* bodies are unduly prominent, but not so markedly as in other case.

"The *Kidneys* are moderately hyperæmic, right more so than left, but neither so much as in other case.

"*Mesenteric glands* are much enlarged but not generally red. They present no degeneration or sign of tubercular lesion.

"In the *small intestine* there is a general enlargement of the solitary follicles and Peyer's patches, but it is not so great as in the other case.

"Microscopic Examination."

"Portions of the spleen, mesenteric glands, intestine, and brain were removed from both cases and prepared for microscopic examination. Nothing special was revealed by this examination, and, in particular, no micro-organisms were discovered."

The symptoms of 36 cases retained in the institution were chiefly as follows:—Sudden accession of illness; headache and sickness usually earliest symptoms, complaint being usually made of pain in the right side. In 8 cases there was drowsiness; in 7 cases the temperature rose slightly above 100°; in one case it was 104·8° for a few hours; in the remaining cases the temperature was normal, or nearly so. There was diarrhoea in only one instance. In periods varying from a few hours to two or three days health was restored, frequently after deep sleep and perspiration. 31 severer cases were treated in the Fever Hospital, Belvidere. Headache was invariable and often severe, and was accompanied by nausea or vomiting. In a few cases there were rigors, and in three instances, sore throat. Pain in one or both sides was generally complained of, and occasionally there was drowsiness approaching to stupor. Two of the patients were delirious. Temperature always increased, sometimes to more than 105°—the highest reached was 106·2°. At some period of the illness there was cough. There were 17 cases of distinct, and 7 of doubtful, pneumonia. Herpes was present in 13 cases, and in 5 the spleen was enlarged. Amongst the rarer symptoms were urticaria, dusky spots on the legs, and catarrh of the air passages.

It is remarkable that there were only 2 cases amongst the inmates of the Female Industrial School, although it is placed beside the boys' institution and worked in connection with it, having a common kitchen and wash-house.

Dr. Russell investigated the cause of the outbreak, and satisfied himself that it was due to bad sanitary conditions. The site is bad, is near an overcrowded grave-yard, and is surrounded by four-story

tenement houses. The space occupied is very limited—namely, 7 square yards per head for the boys, but 10·3 for the girls. The play-grounds give 3 square yards for the boys, and 4·2 square yards (together with a cloister or covered space) for the girls. The sleeping accommodation affords 375 cubic feet for the boys and 3·6 for the girls, being the only advantage which the former possess over the latter. In the school-room the boys have each 216 and the girls each 254 cubic feet. The boys' lavatory is a "cold, damp, uncomfortable-looking place, without hot water at the taps, situated in the court-yard." The condition of the drainage system of the institution is described by Mr. Fyfe, Sanitary Inspector, as follows:—

"13th March, 1889.

"The drainage system of the boys' workshops, school, and dormitories was smoke-tested to-day.

"The following are the defects which were noted:—

"Smoke issued in the W.-C. attached to the dormitory in the top-flat, and from the joint at the top of the window outside; also, in the W.-C. apartment attached to the dormitory immediately beneath this, apparently from defective fittings at the jawbox. It also came up in considerable volume in the small private washing-house on the opposite side of the court.

"The sink in the closet attached to the lowest dormitory is connected to the soil-pipe below the seal, and the ventilation of the soil-pipe is insufficient. Inside of the seat of this W.-C. filth and dirt were found in considerable quantity. Below this W.-C. and bath apartment is the boys' lavatory, a long chamber having iron basins ranged along each side. There are six bell traps in this chamber. Two were lifted, and both were found to be choked with dirt, and consequently inoperative.

"An old disused waste pipe, four inches diameter, was found connected to the main drain running out to the south of the dormitories. It was built about two feet into the wall, and was quite open. *The main drain was thus being partially ventilated into the stones and mortar of the gable at the south end of the school-room.* At this end of the building, just at the stairs leading towards the south, the ground was opened. The soil and sand turned up were teeming with large white worms, which were crawling about in every direction. I understand that coffins containing human remains were found some time ago in the court attached to the girls' portion of the school when a portion of it was being dug up to lay the drains.

"The steam pipes which heat each of the three dormitories are connected to the drains, so that hot water and steam are discharged therein during heating time. This, of course, ought to be discontinued.

"I got a portion of the floor of the centre dormitory opened. The

deafening is composed of ashes and builders' refuse—viz., lime, stones, sticks, &c. Cobwebs were formed among portions of it; but no offensive smell could be felt. No ventilation is provided underneath the flooring of any of the dormitories.

"The main soil pipe from the water-closet attached to the dormitories is connected to the back gutter, and takes off the rain water. This soil pipe should be carried up full bore three feet above the roof, and a separate rain conductor ought to be erected in order to take off the roof water. The main drains are very deep, and quite inaccessible.

"(Signed)

PETER FYFE,

"Sanitary Inspector."

"Addenda, 14th June, 1888.

"Drain pipes in cellar under boys' lavatory were open at the joints, and all the bell traps in lavatory were choked; also, soil pipe of W.-C. (on left of passage leading through the main building of back court) was defective.

"All the defects in the drainage are now made good.

"The steam and hot water from the heating pipes are still discharged into the drains, which will assist in the rapid decomposition of the sewage, and the quick formation within the purlieus of the buildings of offensive gases.

"Nothing has been done to warm the boys' lavatory, which must be a chilling spot in the winter time.

"P. F."

Dr. Russell states that the boys have a low vitality, and are in a condition which renders them peculiarly liable to infection. The girls are placed under much better hygienic conditions.

Is the disease observed by Dr. Russell that which was described by Drs. Grimshaw and John William Moore in this Journal (Vol. LIX., page 399, May, 1875) under the name of Pythogenic Pneumonia? The *post-mortem* appearance showed lesions of the mesenteric glands and of the glands of the small intestines; no specific organisms were detected, but neither have they been so in epidemic pneumonia. Professor Samuel Gemmel, of Anderson's College, saw several of the cases, and made the following note upon the epidemic:—

"It seems to me evident that in the recent epidemic in St. Mary's School we had to deal with a disease allied to the acute specific fevers. The sudden onset with headache, sickness, shivering, and other signs of profound constitutional implication point decidedly in this direction. Moreover, the speedy issue in the four fatal cases (three of them dying after a few hours' illness), finds its closest analogue in the so-called malignant forms of epidemic disease, which terminate in some instances so rapidly that they would baffle diagnosis were it not for clear associa-

tion with cases having more ordinary manifestations. The two *post-mortem* examinations revealed no specific lesions, but the extremely fluid character of the blood in one case, and the general tendency to enlargement of the spleen and mesenteric and intestinal glands in both, are quite in keeping with the idea of acute specific poisoning, although the microscopic examination of the blood and organs revealed no micro-organisms.

"In view of the frequent occurrence of inflammation of the lungs among the patients, the question of the disease being 'infectious' or 'epidemic' pneumonia early suggested itself. This is a disease apt to arise under insanitary circumstances, such as overcrowding, deficient ventilation, and other hygienic errors apt to induce infectious diseases in general. And, no doubt, in this school the sanitary conditions, especially with regard to air-space, as indicated both by the Government Inspector and Dr. Russell, are defective; and pneumonia, not, however, as an epidemic, has been a frequent visitant in recent years. But it must be borne in mind that out of the 66 cases comprised in the epidemic only 17 had decided pneumonia. Other 8 were doubtful cases (some of them very doubtful, the temperature being the only suggestive fact), but the majority of the patients presented no traces of pneumonia at all. No doubt in many of these the disease was of short duration and unattended by high fever, but the general symptoms otherwise were such as to reveal clearly a close ætiological affinity, if not absolute identity, with the more severe cases. They seemed all the victims of the same poison, although in some, owing probably to personal idiosyncrasy aided by favourable atmospheric conditions, it issued in pneumonia.

"It is to be remarked also that the clinical features of pneumonic cases do not strengthen the idea of the disease being 'epidemic' pneumonia arising from insanitary surroundings. There was no prodromal stage; the local lesion revealed itself early; the disease was unassociated with typhoid phenomena; terminated in crisis, in every instance, within a week; the convalescence being rapid, and the restoration of the lung speedy and complete. In no instance did death occur. Such are not the characters of the infective type of pneumonia; and, indeed, apart from their epidemic association, any of the cases might have been selected as exhibiting most of the typical characters of acute pneumonia as it occurs sporadically.

"It is impossible with our present light to dogmatise regarding the exact nature or genesis of the disease. The question as to whether it might not be an anomalous manifestation of enteric or typhus fever was suggested, but nothing transpired to encourage such an idea. The circumstances pointed clearly, of course, to a local origin of the disease, and it is no matter for wonder that it told with such severity among boys of low constitutional vigour living under unwholesome circumstances."

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—ROBERT M'DONNELL, M.D., F.R.S.

General Secretary—W. THOMSON, M.D.

SECTION OF SURGERY.

President—A. H. CORLEY, M.D., President of the Royal College of Surgeons, Ireland.

Sectional Secretary—W. THORNLEY STOKER, F.R.C.S.I.

Wednesday, March 28, 1888.

DR. ROBERT M'DONNELL, President of the Academy, in the Chair.

Brain Surgery.

A special meeting of the Section of Surgery was held in the Royal College of Surgeons for the discussion of three communications on the surgery of the brain which had been read at the previous meeting—namely, by Mr. W. THORNLEY STOKER, F.R.C.S.I., on “Subcranial Hæmorrhage treated by Secondary Trephining;” by SIR WILLIAM STOKES, F.R.C.S.I., on “Traumatic Subdural Abscess of the Brain and its Treatment by Trephining and Aspiration;” and Mr. C. B. BALL, F.R.C.S.I., on a case of “Traumatic Aphasia successfully treated by Trephining, and Removal of a Blood-clot from the interior of the Cerebrum.”

Subcranial Hæmorrhage Treated by Secondary Trephining.

MR. THORNLEY STOKER said:—This case was that of a man, aged fifty, who was received into the Richmond Hospital four days after he had fallen from a cart and sustained such injury that he became insensible. At the time he came under observation he was in a state of stupor, with left brachial motor-monoplegia and a very partial paralysis of the facial nerve on the same side. The left leg showed a barely detectable motor insufficiency. There was no sensory paralysis, and the pupils were

responsive and symmetrical. A bruise simulating depressed fracture existed in the scalp over the upper part of the right fissure of Rolando.

No accurate history could be obtained, and it was not possible to say whether his symptoms were of apoplectic origin or due to pressure on the surface of the brain, the result of laceration of a meningeal artery. This uncertainty as to the nature of the case caused delay in operating. On the ninth day of the case the man had become worse, and was evidently dying. He was completely hemiplegic on the left side, profoundly comatose, could swallow in the most imperfect manner, and breathed, with stertor, only 12 or 14 times in the minute. The conclusion came to was that the symptoms were probably due to hæmorrhage between the bone and dura mater, dependent on a laceration, with or without fracture, of the middle meningeal artery. Although there had been, so far as could be ascertained, no complete recovery between the injury and the advent of the later symptoms of pressure, and therefore an absence of that interval so characteristic of subcranial pressure; yet, on the other hand, there had not been that even level of illa, or that uniformly downward path of symptoms, indicative of laceration or apoplectic pressure.

The reading of the case, as expressed at the time, and fully borne out by its subsequent history, was this:—

1. Hæmorrhage over the right motor area, between the bone and dura mater, probably due to laceration of the middle meningeal artery or one of its branches, most likely associated with fracture, and producing the partial left paralysis which at first existed.

2. Subsequent increase of the hemiplegia, due either to renewed hæmorrhage, or to that sudden yielding of brain function which is repeatedly seen both in hæmorrhages or serous effusions which have existed for some time, even though no additional mechanical pressure is called into play.

The existence of the scalp injury over the upper and back part of the motor area was of less value in indicating the seat of pressure than the opposite paralyses, which pointed clearly to the engagement of the greater portion of the right motor area, including the extensive surface occupied by the cortical centres for the various parts of the upper extremity, the face and tongue, and lower extremity, the interference with them being in the sequence in which they are written.

As to the assumption that the pressure was cortical, and not apoplectic, it was founded on my belief in the absence of any sensory paralysis, and the teaching on that point, so well expressed by Ferrier, who says that "Strictly cortical lesions of the motor area do not cause anæsthesia in any form, and it may be laid down as a rule, to which there are no exceptions, that if anæsthesia is found along with motor paralysis, the lesion is not limited to the motor zone, but implicates also, organically or functionally, the sensory tracts of the internal capsule or the centres to which they are

distributed." The cortical nature of the pressure was further supported by the existence in the early stage of the case of a pronounced brachial monoplegia, as it is well established that monoplegia is a condition due to interference with the cortex and not usually found in more deeply situated lesions.

Considering the whole story of the case, and in view of the inevitable death of the patient if not relieved by treatment, it was determined to trephine him. This was done on the 21st of June, the day on which he exhibited the pronounced conditions just described, and the ninth after his accident.

The patient was completely comatose, and no anæsthetic was used. The injury over the fissure of Rolando was taken as the point indicated for operation, because, although not in the centre of the engaged portion of the motor area, a possible fracture existed there. A trephine with a diameter of 26 mm. was applied, and on the disc of bone being removed, the antero-inferior edge of the opening disclosed the edge of a well-formed blood-clot. A second trephine opening was made immediately below and in front of the first, and an oval opening measuring 52 mm. rendered available for removing the clot. At its centre the clot was so thick that the dura mater was distant from the cranium about 40 mm. Before the patient was taken off the operating table he moved his left arm and leg with tolerable freedom, asked for a drink of water, which he readily swallowed.

An uninterrupted good recovery was made. The evening of the day of operation the paralysis and brain symptoms had all but disappeared, and he could pass water voluntarily. A day later he was in a perfectly normal condition as regards any brain symptoms. He was kept under observation until September 29th, when he left hospital.

If another case resembling this offers itself for treatment, I will consider the propriety of making drainage as efficient as possible by forming a small trephine opening at the nearest accessible point to the lower edge of the line of separation between the cranium and dura mater. I was able to arrive at a conclusion justifying a useful operation by two circumstances—first, that I could, independent of any knowledge of a fracture enabling me to localise the hæmorrhage, put my finger over the motor area and say with sufficient accuracy, "There is pressure here over the cortical centres for the upper extremity; it extended downwards and forwards to those for the face; it afterwards reached upwards to those for the lower extremity." The sequence is anatomically perfect. First a brachial monoplegia; then, as the blood or pressure effect extends, a facio-lingual; and finally, a crural paralysis.

Independent of these points, the case—as one in which no defined bone lesion served to localise the hæmorrhage—belongs to a class sufficiently rare to deserve notice. If I required any other apology for presenting

it at such length, I would have it in the words of so eminent a surgeon as Mr. Hutchinson, who says, speaking of instances of effusion of blood between the bone and dura mater—"These are especially important, because generally supposed to be capable of relief by treatment. Yet it is a remarkable fact that the modern annals of surgery do not, so far as I am aware, contain any cases in which life has been saved by trephining for this state of things."

On a careful study of the light which modern investigation has thrown on the localisation of intra-cranial pressure, and the security which modern surgical methods have given to the operation of opening the cranium, and bearing my clinical observation of deaths from doubtful intracranial accidents in mind, I have come to this conclusion for future guidance—that if I am in doubt I will operate.

Traumatic Subdural Abscess of the Brain and its Treatment by Trephining and Aspiration.

SIR WILLIAM STOKES referred to the statistical records of Abercrombie, Gull, and Sutton, which show that of cerebral abscesses the traumatic subdural forms are those which occur with least frequency. He also pointed out how, until comparatively recently, cerebral abscesses were considered as a rule a necessarily fatal condition, and that the reason they are no longer considered as such is due to the knowledge we have acquired of the localisation of cerebral function, injury, and disease, and also to our improved knowledge of the principles and practice of antisepticism. The author was of opinion that the advantages to be derived from trephining in such cases are more likely to be observed in these cases than in other conditions causing pressure, and alluded to eleven recorded cases operated on, in five of which the recovery was complete. He then gave the details of two cases in which he had performed trephining in the Richmond Hospital, both of which were illustrative of the pathological fact noted by Dease, as to the late appearance of cerebral trouble after cranial traumatism. In the first of these cases he did not succeed in reaching the abscess and the patient died; in the second, however, he did, and the recovery was complete. In this the matter was not reached until the needle of a hypodermic syringe was introduced to its full length. The relief was immediate. About $1\frac{1}{2}$ oz. of pus was removed, and the abscess cavity then washed out with a 1 per cent. solution of carbolic acid.

The author then mentioned the principal details of the cases that were operated on by Dupuytren, Roux, Fenger, and Lee, Rentz, Macewen, Hulke, Sir J. Paget, and Marshall, and from these as well as his own cases he considered the following propositions may be stated:—

1. That after the primary symptoms of cerebral traumatism have subsided, there is frequently a latent period of varying length during

which there are no distinct brain symptoms connected with abscess formation whatever.

2. That their appearance is as a rule sudden, and if uninterfered with run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatism is not incompatible with a perfectly afebrile condition.

4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation.

5. That both as regards colour and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilm's case, published by Rose of Berlin, they may be transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That having regard to the great mortality of cases of cerebral abscess when uninterfered with—viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*.

8. That in the case where the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and excavation.

11. That drainage is desirable in the after treatment of such cases.

12. That both during and subsequent to operation interference in these cases a rigid antisepticism is imperatively required.

Case of Traumatic Aphasia successfully treated by Trephining, and Removal of a Blood Clot from the Interior of the Cerebrum. By Mr. C. B. BALL.

F. B., aged twenty-six, admitted September 1st, 1887. He stated that he had been struck on the head with a penknife ten days before coming under observation. He presented himself at another hospital immediately after the accident, but his case was not considered sufficiently urgent for him to be detained as an in-patient. Since the accident he has found difficulty in using the right words, as, for instance, he said he had a "man" in the side of his head, when he meant "pain." He stated that the difficulty of speaking and pain in his head have increased considerably during the last few days. Upon examination a small scab was found adherent to the scalp, over the squamous portion of the left temporal bone; this, when detached, showed a cicatrix apparently extending deeply through the temporal muscle, but the wound was quite healed.

Classifying the symptoms presented by this patient during his stay in hospital, we found that his motor aphasia was to the extent of being

unable to name articles which were shown to him correctly, while in speaking he constantly used wrong words or parts of words. Although he was able to write his name correctly, and with rapidity, and copy writing, he was unable to write from dictation, or to write sentences which he originated himself; his attempts to do so did not show a single properly-formed character.

Word Blindness.—When given a book to read he said the words ran into one another, and then he could not make them out. *Word Deafness.*—When asked questions his answers were sometimes so irrelevant as to suggest that he had not appreciated the meaning of the query correctly; and when told to put out his tongue he opened his mouth only, but when he was set an example he at once protruded the tongue. This was frequently tried with the same result.

There was no paralysis whatsoever to be detected of any of the voluntary muscles when he came under my observation; and, judging from the fact that immediately after the accident his case was not considered sufficiently grave for admission into another hospital, there could not have been at that time any overt paralysis.

Five days after his admission his symptoms had so much increased that it was determined to operate. A flap was turned down, including portion of the temporal muscle, and containing in its centre the cicatrix; this disclosed a wound of the squamous portion of the temporal bone of a size and shape likely to be produced by the small blade of an ordinary pen-knife, held horizontally, with the back of the knife towards the patient's back, and the edge looking directly forwards. A medium-sized trephine was now applied, and a circle cut out, containing in its centre the cut in the bone; this was attended with some difficulty, as the lower part of the circumference was exceedingly thin, while the upper portion was tolerably thick; the piece was, however, removed without injury to the dura mater by the trephine. It was found that the knife had perforated the dura mater and brain. The wound in the dura mater was enlarged, in doing which the large posterior branch of the middle meningeal artery was divided, and gave some little difficulty to control: this vessel had very narrowly escaped injury by the penetrating knife. A sinus forceps was gently passed along the brain wound, and the blades separated, when a dark-coloured blood presented, and was gradually extended by the internal brain pressure. Some more fragments of clot were removed by the sinus forceps, and by a stream of weak perchloride of mercury solution from a syringe. A drainage tube having been introduced, the flap was replaced and held in position by deep sutures, including the temporal muscle.

On the evening of the same day the patient was much more rational, and carried on a long conversation, with very few mistakes in his selection of words. Next morning he was again more aphasic, and it

was found that the drain had become blocked. Upon freeing it a considerable quantity of fluid, containing broken-down blood clot, was removed, and his power of speech improved. He made an uninterrupted recovery, and regained completely his power of writing, reading, and speaking.

In this case I believe the knife penetrated the superior temporo-sphenoidal convolution, traversed the fissure of Sylvius, and probably injured Broca's convolution, and that his symptoms were due to a blood clot in the fissure of Sylvius, which was breaking down, and which was evacuated by timely surgical operation.

DR. C. J. NIXON, commenting from a physician's point of view on the cases submitted, said it appeared that in Sir William Stokes' case there was a condition which imperatively demanded operative procedure. No operations redounded more to the credit of modern surgery than the removal of pus from within the cranium. Of the points emphasised by Sir William Stokes he specially endorsed two—(1) the existence of an apyrexial condition in cases of cerebral abscess and the great value of antisepticism in what was called brain surgery. In Mr. Thornley Stoker's interesting case many points were raised, which he ventured to discuss with diffidence, as he had only read the abstract sent to members of the Academy. From the abstract it would appear that the patient was in a condition of stupor up to the time of operation. In that condition he would consider a matter of extreme difficulty to estimate the existence of any degree of sensory paralysis. This was of importance, as, notwithstanding the observation of Ferrier that a lesion in the cortical motor area was unattended with any disturbance of sensibility, other observers had noted forms of anæsthesia in disease of the central convolutions, especially marked at the distal parts of the paralysed extremities. Another point struck him in the case—namely, the stress which Mr. Stoker laid on his ability to recognise accurately the site of the lesion independently of any external conditions, such as evidence of a fracture pointing in the direction. No doubt Mr. Stoker had accurately diagnosed the nature and site of the lesion, and by his skilful interference had saved the patient's life. But more value should, in his opinion, be attached to the history of the injury, and the external evidence of it which existed, as a help of very material kind in aiding the diagnosis than Mr. Stoker seemed to think. Apart from the history of a fall and the signs of injury to the scalp, a limited lesion in the internal capsule just behind the knee would satisfy the conditions which existed in Mr. Stoker's case. Such a lesion would be produced by a rupture of the termination of the internal branch of the middle cerebral artery which passed between the two divisions of the lenticular nucleus, or it might be caused by a localised softening in the fore part of the posterior limb of

the internal capsule. With regard to the case reported by Mr. Ball, he understood that trephining was performed over the situation of Broca's lobe. The symptoms, however, in the case did not appear to correspond with motor aphasia. Hence the localisation of the lesion was not in the third frontal convolution. The three characteristic conditions of sensory aphasia present were (1) a verbal amnesia, the form named by Kussmaul as "paraphasia," in which the patient wrongly named objects; (2) a form of psychical word-blindness, the patient being unable to read, and the words running into each other; and (3) a form of psychical word-deafness, in which the patient did not understand spoken words—*e.g.*, when asked to put out his tongue he did not do so. The aphasia being sensory in form, the parts of the cortex affected were the visual and auditory centres—*viz.*, the angular gyrus and the posterior part of the superior temporo-sphenoidal convolution, with probably the connecting fibres between the latter and the convolution of Broca. An injury of the fourth branch of the middle cerebral artery which ran along the horizontal division of the Sylvian fissure would explain the condition which existed. It must be conceded that very great difficulty arose in the recognition of the special form of aphasia existing in the early stage of the lesion from the tendency which even a strictly localised focus of disease has to produce a complete dissolution of speech. At the same time it should be borne in mind that aphasia in its different forms occurred sometimes as a transient condition. Henoch reported a number of cases of aphasia in children as due to intestinal accumulation, which immediately passed away under the influence of free purgation; and in adults the condition described as transient aphasia was not uncommon. The recognition of such conditions of aphasia must have some influence, however indirect, in determining the expediency of operative procedure in traumatic aphasia. With regard to the general question of trephining in subdural hæmorrhage, he thought, speaking merely as a physician, that the two points which had to be considered in relation to it were—first, the risks of the operation; and, secondly, the possibility of the hæmorrhage being absorbed by the ordinary processes of absorption. It was not contended, he assumed, that trephining was an operation free from grave risk, notwithstanding all that antisepticism had done for it. Although none at the present day would endorse the opinion of Stromeyer, expressed some years ago, in speaking of gunshot injuries of the head, to the effect that "trephining should be banished from surgery," it was at the same time of value in emphasising the danger attached to the operation. The question of the absorption of the blood-clot was also to be taken into account; and there seemed to be no reason why, if small in extent, it could not be got rid of by the ordinary processes of absorption. He was not, however, opposed to operative procedure for affections of the brain in cases which

demanding it, and he considered the most brilliant triumphs of modern surgery lay in what had recently been done in this direction. The three cases brought before the Academy were cases in point; but amidst these successes it was right to observe that such an operation should not be undertaken except where the necessity of it was imperative and the indications for localisation fixed and determinate. Apart from special cases, the good results of trephining could be valued only by a comparison of cases where it had been unsuccessful with cases where it had undoubtedly saved life. As yet they were not in a position to make such a comparison; and as it was specially in regard to the treatment of intra-cranial hæmorrhage that conclusions had yet to be drawn, the cases under discussion had a high intrinsic value.

MR. KENDAL FRANKS said the question of cerebral localisation was of prominent interest, having regard to Professor Cunningham's announcement at the last meeting of the Section in Anatomy, that Professor Schäfer had recently denied that the centres for hearing, tactile sensibility, and taste, resided in the temporo-sphenoidal lobe. He did not suppose the Academy competent to decide that question when experts disagreed; but, whether Schäfer's view was true or not, it did not affect the general question of localisation, though some of the methods adopted were open to doubt. He did not, for instance, rely on the test of firing a pistol behind the head of a monkey, whose temporo-sphenoidal lobe had been removed on both sides, as proving that if the monkey noticed the concussion, hearing did not reside there; or, that if the monkey did not notice it, hearing was destroyed; because monkeys differed in their intelligence and inquisitiveness, and Professor Horsley had a monkey which could hear perfectly, yet treated the concussion with contemptuous indifference. But, on the other hand, he had seen sufficient of the mode in which Professor Victor Horsley conducted his experiments at the Brown Institution, to dispel any doubts he might have entertained as to the accuracy of the results arrived at in the topography of the brain. Experiments were made on monkeys, which, during the whole process, were kept under ether. The surface of the brain was divided into small quarters of 2 millimetres each, or about one-twelfth of an inch. There was a map corresponding to the brain divided into similar spaces in which the results of the experiments were noted. If in fifty experiments on the brain of a monkey under the same conditions, one particular spot was stimulated, and the same movements were thereby produced, there could be little doubt that that centre corresponded with those movements. In the face of such experiments it was impossible to say there were not motor centres in the brain. Some of the results obtained by Ferrier, Victor Horsley, and Schäfer, in London, differed from those obtained by Goltz and other foreigners. The reason of the difference was that the foreigners, as a general rule, used currents that were entirely too strong.

They used the galvano-cautery or the thermo-cautery in their operations, and they did not always employ antiseptics. Therefore, not only was the portion intended to be stimulated affected, but a large portion of the brain surface in the immediate neighbourhood, and hence they had confused movements of the body, and the true action of the particular centre was lost. Professor Horsley, however, adopted the very weakest current that would produce a movement; it was so weak that when the electrodes were placed on the tip of the tongue the current could be just detected. The points were placed nearly together—merely 2 millimetres or $\frac{1}{16}$ in. apart. Mr. Stoker's case furnished a beautiful illustration of the way in which certain symptoms localised certain things in the brain. There were two indications of the locality of the injury. First, there was a certain paralytic condition, and there was, secondly, the external injury localised at the upper part of the fissure of Rolando, practically over the leg centre. Mr. Stoker could not, even if gifted with second sight, have more accurately mentioned the idea expressed by Professor Horsley in the *British Medical Journal*, that of all the symptoms of localisation in the brain, graduated paresis shading off round the centres was the most important. Thus, there was a distinct paralysis of the arm fading off into partial paralysis of the face and limb—in other words, extending upwards and downwards in the motor area. Therefore, he operated perfectly rightly on the supposition that there might be a depressed fracture; and the result proved that as between the two means of diagnosing the situation, the accurate one was the situation indicated by the local centres and not the external injury of the skull. In Mr. Ball's case, he had the external injury to guide him, and he had the aphasia which indicated more closely than the external injury did what the situation of the clot was in the fissure of Sylvius pressing on Broca's convolution. Sir William Stokes' case did not come under the same category, because he had the general symptoms of pressure, but no localised symptoms. He had, however, a most valuable guide, namely—an external injury over the frontal bone indicating the position in which he should look for an abscess.

MR. M'ARDLE said Mr. Stoker had called attention to the fact that, in determining the site of pressure, he was guided less by the scalp wound than by the opposite paralysis. True, the scalp wound rarely agreed with the exact point of greatest pressure. In several lately recorded cases—notably in one of Krönlein's—the clot was on the side opposite the scalp wound; therefore, the scalp wound could not be taken as indicating the point for trephining. Krönlein's rule, which seemed a good one, was to apply the trephine on a line drawn from the supra-orbital ridge backwards to the occiput, parallel to the base line of the skull, the anterior opening being made at a point 3 to 4 centimetres from the zygomatic process of the bone, the posterior where a vertical line behind the mastoid crosses the horizontal line. Two such openings

expose all the usual positions for circumscribed collections of supra-dural hæmorrhage. This was shown in a plate which he exhibited, indicating the usual areas for collections of blood—namely, the fronto-temporal, temporo-parietal, parieto-occipital regions. Both these openings would, more than likely, touch the temporo-parietal collections, whilst the fronto-temporal would be exposed and drained by the anterior, the parieto-occipital by the posterior. The question of skull-drainage was not a new one; it had been discussed in the valuable papers of Wiesmann, and alluded to by Krönlein. The former had counter-drained where head symptoms rendered trephining necessary. On the question of statistics of cases such as Mr. Stoker's, Nancrede, writing, in 1884, in his contribution to Ashhurst's "*Encyclopædia of Surgery*," stated "several successful cases occurred within the past twenty years, thus refuting Mr. Hutchinson's statement." Since then many recoveries have been recorded. He found they numbered 263, and, of these, 110 were subjected to trephining. Of this number, 74 recovered, or something over 67 per cent. Of this number, 10 were instances of hæmorrhage, and agreeing in every way with Mr. Stoker's case. Of these 10, only 2 died, leaving 80 per cent. successful, thus making the mortality less than that after trephining for any other cranial trouble, traumatic or otherwise. Dr. Nixon had thought fit to call in question the utility of surgery in such cases as these, believing that blood or pus usually becomes absorbed; but let him see the limited prospect of any such result from the terrible mortality attending the expectant treatment which he advocated. Of 16 cases without external wound, 12 died; of 59 cases with fracture of the skull, 58 died; of 41 with compound fracture, 37 died. Now, trephining gives 80 per cent. of recoveries in cases like Mr. Stoker's; this, compared with the fatal results of the expectant method, should convince even Dr. Nixon of the fallacy of his views on this subject.

MR. THOMSON, replying to Dr. Nixon, said he could quite understand that the physician, whose duties were largely of a passive character, did not appreciate the position of the surgeon, whose duties were of a practical nature, when, as in cases such as these, presenting symptoms of fatal injury, he tried to relieve the patient from threatening death. The statement of M. Stromeyer that the operation of trephining ought to be banished from surgery carried with it its own refutation. Indeed, it recalled Sir Astley Cooper's absurd proposition as to compound fracture of the skull with loss of brain substance, that where portions of the skull were found occupying the position that the brain substance had occupied, without symptoms of compression, he would leave the bones there—in other words, his doctrine was that the bones were to take the position of the lost brain substance. With their present knowledge of brain surgery such a statement was rightly characterised as absurd. Dr. Nixon had raised the question of the risks of trephining. What were the risks of

trephining? Did the operation add appreciable danger to the condition of a patient who had a large blood-clot between the dura mater and the cranium, or who had a depressed fracture, or any other kind of fracture? Take the results of the operation in traumatic cases, in which there were no fractures at all, but where it was done for some lesion of the brain. In 30 cases trephined by one operator, Mr. Briggs, for epilepsy, there was only one death. Here there was no immediate lesion in the brain from traumatism, and therefore the operation was one of election and to be judged by its results. Statistics of a large number of cases collected by Nancrede showed that in cases trephined for traumatism, the percentage of deaths was only ten, while in a series of 115 cases the percentage was only three. So far for the actual risk of trephining. Then the question would perhaps arise in what cases the surgeon ought to trephine? Of course the surgeon most frequently saw the cases of traumatism, and it was, therefore, important to arrive at some certain rules in those cases. With certain reservations, which, doubtless, Mr. Stoker himself would accept, the doctrine ought to be, as declared in his paper, that where the surgeon was in doubt he ought to operate. This should be the rule where there was fracture or injury of the skull with brain symptoms. Although it was true, as Dr. Nixon had stated, that a certain number of those cases of injury recovered, yet there was a large proportion that ultimately went to the bad, developing epilepsy or some brain affection which required treatment, or might kill the patient. Therefore in a case of depressed fracture, without any immediate symptoms, it was a justifiable thing to make an examination of the condition of the skull by incision of the scalp; because it should be remembered that with a depressed fracture of the outer table there might be a very considerable fracture of the inner table, or it might be fissured or injured. He exhibited a trephine-button showing a very slight injury of the external table, attended with considerable injury of the inner table driving down the fragments. There was another class of brain lesions which were not traumatisms. Last year's volume of the London Pathological Society contained a report of a Committee appointed to investigate the symptoms in 54 cases of tumour of the brain. In some instances the symptoms were quite the reverse of what one would expect; and the reporters came to the conclusion that "their localisation was often a matter of pure conjecture." Even in traumatic cases there might be symptoms of compression without anything recognisable as a compressing material. Hutchinson had shown that in cases of arachnitis there might be hemiplegia, and they might trephine, believing in the existence of some compressing material altering the brain relations; and yet in those cases they might find nothing at all. So far as the surgical field was concerned, they were in a great degree limited to cases of fracture of the skull. In such cases the operation of trephining added no appreciable

risk. A great number of those cases, if let alone, would die, and in such it was the surgeon's duty, where he had a doubt raised by the symptoms, to trephine. In reference to Dr. Ball's case Dr. Nixon suggested that the patient might have got well without trephining; but Dr. Nixon, as a physician, forgot what a surgeon would not forget, that there was a punctured fracture caused by a blow with a knife which had penetrated the bone, and it was therefore a case, of all others, in which, according to the rules of surgery, where there were symptoms of compression, a surgeon would be bound to do the operation which Dr. Ball so brilliantly performed.

MR. TOBIN suggested, from his experience of a trephining operation which he performed at Netley on a soldier who had attempted suicide, that when the opening was made, if pus or serum was not discovered, the head should be placed in a dependent position, so that the serum might trickle out.

MR. F. T. HEUSTON said, with regard to Mr. Stoker's rule in traumatic cases—namely, "if in doubt, operate," the converse ought to be the rule in idiopathic cases. He had had several instances. One in which an idiopathic lesion was diagnosticated in the temporo-sphenoidal lobe, and operation was recommended; but, having decided to leave it for further development of symptoms, the patient recovered, without any evidence of the disease remaining. Another was the case of a girl, and the symptoms indicated pressure on the left ascending frontal and the superior and middle horizontal frontal convolutions; but the result proved the diagnosis incorrect.

DR. J. A. BYRNE said he saw Dr. Ball's case before the man went to hospital. Every chance had been given for cure by the *vis medicatrix naturæ*.

MR. W. THORNLEY STOKER replied.

SIR WILLIAM STOKES also replied, concurring in Mr. Stoker's doctrine—that in doubtful cases he would trephine. As to the risk of the operation, it was more frequently performed by Pott and his contemporaries than it was done in these days, with the securities of antiseptic surgery. He could not himself recall a single case in his own practice, or that of his colleagues, where fatal, or even serious, consequences were traceable to the operation. Great difficulties surrounded diagnoses; but, if the rule indicated by Mr. Heuston were adopted, surgery would be stripped of some of its most brilliant achievements.

MR. BALL, in replying, said Mr. Thomson and Dr. Byrne had answered Dr. Nixon sufficiently as to the possibility of his patient recovering without the operation. It was only when the aphasia became intensified, and the man was going from bad to worse, that the operation was performed. The result of the operation justified its performance, as far as spontaneous recovery was concerned.

SECTION OF OBSTETRICS.

President—JOHN RUTHERFOORD KIRKPATRICK, M.D., F.K.Q.C.P.

Sectional Secretary—ANDREW J. HORNE, F.K.Q.C.P.

Friday, May 25, 1888.

The PRESIDENT in the Chair.

Specimens exhibited.

DR. W. J. SMYLY exhibited a hairpin which he had removed from the bladder of a woman who came to the City of Dublin Hospital.

DR. MACAN exhibited a fibrous tumour and uterus which he removed on the 2nd of May from a woman aged forty-eight in the Rotunda Hospital. When she first came in her uterus was of enormous size, and she complained of excessive hæmorrhage. He determined to remove the tumour. He easily got the stump. The stump, however, unfortunately sank into the peritoneum and gave rise to acute sepsis, which caused her death on the 12th of the month.

DR. MACAN showed the remains of an ovarian tumour. It proved to be so absolutely rotten that he had to enlarge the incision in order to get command of it, and then to scoop it out in handfuls. It was afterwards obvious that there had been adhesions of the tumour to the intestines. On Saturday last her temperature rose to 106°. He found her suffering from bronchitis. He inserted a drainage-tube, through which a large quantity of perfectly harmless-looking and smelling serum came away. The woman had been going on very well since.

DR. MACAN also showed a specimen of an ordinary ovarian cyst. The only thing to make this specimen remarkable was that the case had been for a long time treated as one of ascites.

DR. MACAN further exhibited Apostoli's electrical apparatus.

DR. JOHN A. BYRNE exhibited a large fibroma which he had removed from the uterus per vaginam. It was of an interstitial character, grew on the posterior wall of the uterus, and hung down into the vagina. The woman was thirty years of age. She had one child; and her next parturition was an abortion, which was attended with fearful hæmorrhage. He put in a large pessary and sent her back to the country. While in the country she had another abortion, which was also attended with fearful hæmorrhage. When she returned to the hospital it was found that there was a tumour of such a size that no pessary would hold up her uterus. The tumour occupied the whole of the sacral space. She was chloroformed, and the operation was performed. It occupied more than an hour. An incision was made close to the upper part of the

vaginal wall, and after a good deal of pulling and tugging the tumour was got out. The woman lost a great deal of blood, not so much by active hæmorrhage as by a kind of oozing. A couple of silver wires were put in, and she was placed in bed, but never rallied, and died in 48 hours. His reasons for performing the operation were, first, the great size of the tumour; secondly, the great amount of hæmorrhage from which she suffered; and, thirdly, the repeated miscarriages which she had sustained.

DR. BYRNE also showed specimens of malignant disease of the uterus from a case which also proved fatal. The woman, who was aged about fifty, came to the hospital in a very blanched condition in consequence of hæmorrhage. A small malignant growth was found springing from the uterus. There was a great deal of hæmorrhage from the growth, which was repressed. They also found a large tumour, which was evidently fluid, occupying the supra-pubic, left iliac, and lumbar regions. This was quite movable. They diagnosticated malignant disease of the uterus, complicated with a cyst, which was probably malignant. The woman was healthy in every other way. He resolved to remove both the uterus and the cyst by abdominal section; but forty-eight hours before her death she got a rigor, accompanied with great pain; her abdomen became very tympanitic; and she complained of great difficulty of breathing, and sank. On a *post-mortem* opening of the abdomen, which was very fat, a great quantity of serum rushed out. The cyst, which broke down in the hands, was found to be intimately connected with the viscera, and an enormous quantity of a substance resembling pea soup came from it. The cyst was lined by a membrane the entire of which was covered with globules bearing all the appearance of malignant disease. The uterus had a very peculiar one-horned appearance. The Fallopian tube was very large and distended. The specimen showed malformation of both the uterus and the tube.

Successful Removal of the Right Uterine Appendage.

DR. PUREFOY communicated a case of successful removal of the right uterine appendage and parovarian tumour in a case of dysmenorrhœa and dyspareunia. He should add that the tumour had been for years of the same size. The ovaries presented the appearance of a slight amount of cystic disease.

Case of Peri-Uterine Hæmorrhage.

DR. JOHN A. BYRNE communicated a case of peri-uterine hæmatocele, which was treated by tapping and eventuated in recovery. The case was illustrated by a very accurate drawing, made by Professor Birmingham.

DR. W. J. SMYLY asked was there any icterus, or whether urobilin was present in the urine. The effusion was evidently intra-peritoneal. The

treatment of the tumours was a matter of interest. It was, if possible, better to let them alone. So long as the blood remained in a cyst, and air did not get at it, not much harm was likely to result; but he believed it to be very dangerous to interfere with them. Puncturing, except for the purpose of diagnosis, was useless. It was better to evacuate the contents of the tumour through a free incision, and afterwards wash out the cyst. It was a matter of dispute as to the best way of approaching hæmatocele. Most men would be inclined to cut from the vagina though some preferred abdominal section. The rectal method had nothing to recommend it.

MR. DUKE said he had himself suggested that the incision should be made in such a position that the valves of Houston and the folds of the rectum might be made to act as valves; and the result had justified the procedure.

DR. BYRNE, in reply, said he did not agree with Dr. Smyly that the effusion was intra-peritoneal. He was not so wedded to the rectal mode of operation that he would not try that by the vagina; but this particular tumour was more within reach from the rectum. There was very little prominence into the vagina, though the uterus was pressed up. The great prominence was on the rectum side. From the result of this case he would have no objection to tap through the rectum again.

Myxoma of the Chorion, or Vesicular Mole.

DR. MORE MADDEN read a paper on myxoma of the chorionic villi, or vesicular mole. [It will be found in the Number of this Journal for July, 1888, page 17.]

MR. HARLEY mentioned the case of a virgin who had those hydatidiform moles expelled. He also mentioned the case of a woman forty years of age, who he believed was not pregnant, but from whom a hydatidiform mass was expelled.

DR. MACAN said he could not agree to the statement that there had been no conception.

DR. MORE MADDEN briefly replied, and

The section then adjourned.

EXCISION OF THE UPPER JAW.

DR. WHITE, of Sacramento, Ca., reports (*Sacramento Medical Times*) two cases of excision of the upper jaw. The first case was one of a sarcomatous tumour in which Dr. Nelson operated successfully, but the tumour recurred. The second case was for malignant disease, which commenced as epuloid tumour, and gradually involved the whole jaw. Three weeks afterwards the boy left hospital, the wound having perfectly healed.

CLINICAL RECORDS.

Case of Lymphadenoma. By JAMES T. BOLGER, L.K.Q.C.P., L.R.C.S.I.,
of Blaina, Monmouthshire.

J. P., first seen December 22, 1885. He was aged sixty-four years, of robust physique, married, and the father of fifteen children. Of these seven died in infancy—two of them from small-pox, one of inflammation of the lungs, the cause of death in the other four he did not know. His father, who had always been a healthy man, died, aged forty-six, after a six months' illness; his mother died at ninety-seven, always very healthy, and so were the families on both sides.

Patient states that he has never had any previous illness of moment, never worked underground (he lives in a colliery district), for twenty years worked in a forge, but for the last six has been at out-door work. His illness began about five months ago with lumps in the neck, which appeared in the following order:—1st, one behind right sterno-mastoid at the level of the junction of its upper and middle third; 2nd, one under the middle third of the same muscle; 3rd, one in the posterior triangle close above the clavicle; 4th, one under the right and one under the left jaw; 5th, in left axilla; 6th, in right axilla. These are painless, movable, and rather hard. For about a week he had some difficulty in swallowing, but this has quite gone now. Six weeks back breath began to get short, but only when walking briskly, feels much weaker than formerly, and is tired after walking a mile or thereabouts; sleeps well, and appetite has been good until within the last few days. He states that about six weeks ago he suffered from pain in the left side.

December 29th.—In much the same state. Complains of pain just below left costal cartilages, with some tenderness on pressure, and the area of splenic dulness is enlarged. He fancies the glands in the neck and left axilla are getting smaller.

January 28, 1886.—There are still glands to be felt in left axilla, but they are now small and hard, there are none now enlarged under left jaw, and the masses on the right side of the neck are decidedly smaller than before. He looks weak and anæmic, splenic dulness still increased, and a tumour can be plainly felt, reaching almost to the middle line in one direction, and to below the level of the umbilicus in another—this, of course, is the spleen.

February 19th.—Much better and stronger, and does not look so anæmic; the only glands enlarged now are those under and those posterior to the right sterno-mastoid; the spleen has greatly diminished in size.

The next note was taken in the middle of April, to the effect that he feels very well and has discontinued his medicine—solution of perchloride of iron and hydrochloric solution of arsenic. The cervical glands seem, however, to be enlarging again.

May 28th.—In good general health, but the glands on the right side of the neck are still enlarged. Commenced Fowler's solution in three minim doses.

June 7th.—Right cervical glands enlarged to a considerable size, so are those in each axilla, but to a less degree. There is numbness in right arm, and some dilated veins over right side of the chest. Liq. arsenicalis increased to six minim doses.

July 2nd.—All the glands are smaller. Since May 28 he has taken ʒiiss. of Fowler's solution—that is to say, at the rate of rather more than twenty minims a day.

The next note I have is dated October 28th, but after the date of the preceding note I know he kept tolerably well, all glandular swellings disappearing, save on the right side of the neck, and these were so small that they gave him no anxiety. I do not know how much arsenic he took during this time, but fancy it was very little, as he thought himself nearly all right.

October 28th.—He says that about a fortnight back the right cervical glands began to get bigger, and during the last three days have done so more rapidly, accompanied with rather severe pain. There is now a lump under the right ear, covering the angle of the jaw, and a smaller detached one on the right cheek, in addition to the mass in the posterior triangle.

November 24th.—The swellings have increased, that in the posterior triangle considerably; it is of a purple colour in parts, and this fades on pressure; the whole mass is movable to a slight extent, whereas that below the ear is fixed, or, at any rate, its movement is so slight as not to be detected. Hanging the head down is the easiest position, turning it gives severe twinges. There are not any glands enlarged elsewhere; he feels weak, but has a good appetite.

January 6th, 1887.—He now presents the following appearance:—There are two large tumours on the right side of the neck separated from each other by a sulcus, the upper one pushing up the auricle, and also a lump on the right cheek, before noted, but which is now much bigger. The skin over these tumours is purple, and in some places looks as if it had been slightly blistered. The lower tumour extends below the clavicle, and has a few nodules close to its inferior margin. It is as large as can be conveniently grasped by the hand. The upper tumour is slightly smaller. Both are fixed—the smaller lump on the cheek being movable, however. Hyoid bone, larynx, and trachea are pushed somewhat to the left. There is right facial palsy. Pain is not nearly so great as formerly. Difficulty in swallowing has been present for a fortnight, no food requiring mastication is taken, and neither appetite nor

sleep so good as before. The tongue is coated, breath foul, bowels confined—but has been taking morphin—and breathing natural. He presents a most peculiar appearance—the left side of his face is that of a man you know, whereas the right side is so distorted as to bear not the slightest likeness to its former healthy state.

25th.—He has not now the same facial appearance described in the note of January 6th. There is nothing now to recall his old features at all. The tumours have increased still further in size. There are crusts over their centres, from under which some discharge exudes. The sulcus between them no longer exists. Measurements :—From symphysis menti to middle line behind, R. side, $13\frac{3}{4}$ in. ; L. side, $9\frac{3}{4}$ in. ; R. half of neck, $10\frac{1}{2}$ in. ; L. half, $8\frac{1}{2}$ in. ; from top to bottom, of what is now one great mass, $12\frac{1}{2}$ in. No other enlarged glands can be discovered anywhere. He is very weak and able to swallow only liquids. Died on February 10th, 1887.

I saw the case at irregular intervals, and my notes are not as complete as I should like, still they show the points of interest—namely, that (1) by February, 1886, the glandular swellings, which had previously been quite well marked, were, as far as both axillæ and the left side of the neck were concerned, gone ; (2) that the axillary glands on both sides were swollen again by June of the same year ; (3) that during the summer all tumours disappeared, save on right side of neck (and almost so even here), so did all signs of the big spleen and of anæmia, and he considered himself in first-rate condition ; (4) that in October—still in the same year, 1886—the glands on the right side of the neck, but nowhere else, began to increase in size, and soon assumed the malignant aspect which they maintained in an ever-increasing degree until death. No *post-mortem* examination was obtained, but, even so, I submit there is no doubt about their sarcomatous nature.

As regards treatment he was first put on iron and arsenic, but I have no note as to the quantity taken, and this he discontinued as soon as he felt a little better. Then, when he got worse again, he took Fowler's solution in large doses during the whole of the month of June, after which he was certainly much better, and the lumps in left side of neck and in both axillæ disappeared and did not again recur. At the time I attributed the result to the arsenic, but am not now so positive about it.

As regards the two malignant tumours, excision, I think, would have been the proper treatment, taking all the circumstances into consideration, but the first time I saw them after they had assumed a characteristic aspect, the one was fixed and the other nearly so, and though I do not mean to assert that that fact absolutely contraindicates operation, it certainly makes the prospect less favourable. In conclusion, I wish to draw attention to the fact of two tumours, separate though near to each other, assuming malignant appearances simultaneously.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, July 14, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	June 23.	June 30.	July 7.	July 14.		June 23.	June 30.	July 7.	July 14.
Armagh -	15.5	5.2	15.5	10.3	Limerick -	17.5	49.9	6.7	24.3
Belfast -	23.0	21.4	22.3	18.6	Lisburn -	0.0	4.8	9.7	9.7
Cork -	18.8	15.6	19.5	21.4	Londonderry	30.3	19.6	16.0	16.0
Drogheda	38.1	21.1	0.0	38.1	Lurgan -	30.8	10.3	10.3	15.4
Dublin -	20.2	23.9	19.8	22.0	Newry -	14.0	49.2	28.1	24.6
Dundalk -	26.2	30.6	18.1	8.7	Sligo -	38.5	14.4	9.6	19.2
Galway -	10.1	30.3	26.9	13.4	Waterford -	11.6	11.6	16.2	11.6
Kilkenny	16.9	16.9	16.9	4.2	Wexford -	29.9	25.7	29.9	4.3

In the week ending Saturday, June 23, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 14.5), was equal to an average annual death-rate of 15.5 per 1,000 persons living. In Glasgow the rate was 22.7; and in Edinburgh it was 11.9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 21.0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1.7 per 1,000, the rates varying from 0.0 in eight of the districts to 10.5 in Newry—the deaths registered in that district comprising 3 from scarlatina. Among the 100 deaths from all causes registered in Belfast are 3 from measles, 2 from whooping-cough, 1 from diphtheria, and 4 from diarrhoea. The 4 deaths in Kilkenny comprise 2 from typhus, and the 3 deaths in Armagh comprise 1 from enteric fever and 1 from diarrhoea.

In the Dublin Registration District the births registered during the

week amounted to 253—129 boys and 124 girls—and the deaths to 140—73 males and 67 females.

The deaths represent an annual rate of mortality of 20·7 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 20·2 per 1,000.

There were but 14 deaths from zymotic diseases registered, being 12 below the average for the corresponding week of the last ten years, and 8 under the number for the week ended June 16. They comprise 2 from scarlet fever (scarlatina), 4 from whooping-cough, 1 from enteric fever, 1 from dysentery, &c.

Eight cases of scarlatina were admitted to hospital, being 1 over the admissions for the preceding week; 9 scarlatina patients were discharged, one died, and 39 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, June 16.

Two cases of typhus and 4 of enteric fever were admitted. In the preceding week 9 cases of the former and 3 of the latter disease were admitted. Thirteen cases of typhus and 20 of enteric fever remained under treatment in hospital on Saturday, June 23.

The hospital admissions for last week include also 1 case of small-pox; this case and that admitted during the week ended June 9, were the only cases of the disease in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 26, being 3 below the average for the corresponding week of the last ten years, and 2 under the number for the week ended June 16. Fifteen of the 26 deaths were caused by bronchitis and 8 by pneumonia or inflammation of the lungs.

In the week ending Saturday, June 30, the mortality in twenty-eight large English towns, including London (in which the rate was 15·1), was equal to an average annual death-rate of 15·9 per 1,000 persons living. In Glasgow the rate was 21·6; and in Edinburgh it was 16·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 23·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in eight of the districts to 8·5 in Kilkenny, the 4 deaths from all causes registered in that district comprising 2 from typhus. Among the 93 deaths from all causes registered in Belfast are 4 from measles, 3 from scarlatina, 2 from diphtheria, 1 from simple continued fever, 1 from enteric fever, and 4 from diarrhoea. The 24 deaths in Cork comprise 2 from measles; and the 37 deaths in Limerick comprise 1 each from measles, scarlatina, and diarrhoea.

In the Dublin Registration District the births registered during the

week amounted to 217—110 boys and 107 girls—and the deaths to 168—84 males and 84 females.

The deaths represent an annual rate of mortality of 24·8 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000.

Seventeen deaths from zymotic diseases were registered, being 3 over the number for the preceding week, but 14 under the average for the twenty-sixth week of the last ten years. They comprise 1 from measles, 2 from scarlet fever (scarlatina), 1 from typhus, 4 from whooping-cough, 2 from enteric fever, 2 from diarrhoea, 1 from dysentery, 1 from remittent fever, &c.

Ten cases of scarlatina were admitted to hospital, being 2 over the admissions for the preceding week; 11 scarlatina patients were discharged, and 38 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, June 23.

Only 2 cases of enteric fever and 1 of typhus were admitted, against 4 cases of the former and 2 of the latter disease admitted during the preceding week. Seventeen cases of enteric fever and 10 of typhus remained under treatment in hospital on Saturday.

One of the two small-pox patients in hospital on Saturday, June 23, was discharged in the course of this week. No new case of the disease was admitted.

The number of deaths from diseases of the respiratory system registered is 23, being 3 under the number for the preceding week, and 6 below the average for the twenty-sixth week of the last ten years. The 23 deaths comprise 11 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 4 from croup.

In the week ending Saturday, July 7, the mortality in twenty-eight large English towns, including London (in which the rate was 14·8), was equal to an average annual death-rate of 15·0 per 1,000 persons living. In Glasgow the rate was 18·9; and in Edinburgh it was 16·8.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 19·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in eight of the districts to 10·1 in Galway. The 8 deaths from all causes registered in that district comprise 1 each from measles, typhus, and whooping-cough. Among the 97 deaths from all causes registered in Belfast are 2 from measles, 1 from scarlatina, 1 from typhus, 1 from whooping-cough, 3 from diphtheria, 5 from enteric fever, and 3 from diarrhoea. The 30 deaths in Cork comprise 1 each from diphtheria

enteric fever, and diarrhœa; and the 8 deaths in Newry comprise 2 from scarlatina.

In the Dublin Registration District the births registered during the week amounted to 166—80 boys and 86 girls—and the deaths to 137—61 males and 76 females.

The deaths represent an annual rate of mortality of 20·2 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 19·8 per 1,000.

Twenty-two deaths from zymotic diseases were registered, being 5 over the number for the preceding week, but 6 under the average for the twenty-seventh week of the last ten years. They comprise 3 from measles, 2 from scarlet fever (scarlatina), 6 from whooping-cough, 6 from enteric fever, 1 from erysipelas, &c.

Nine cases of scarlatina were admitted to hospital during the week; this number is 1 under the admissions for the preceding week; 9 scarlatina patients were discharged, and 38 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Three cases of enteric fever were admitted against 2 for the preceding week. Only 1 case of typhus was admitted. Fifteen cases of enteric fever and 9 of typhus remained under treatment in hospital on Saturday.

Only 18 deaths from diseases of the respiratory system were registered, being 4 below the average for the corresponding week of the last ten years, and 5 under the number for the week ended June 30. The 18 deaths comprise 10 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, July 14, the mortality in twenty-eight large English towns, including London (in which the rate was 15·7), was equal to an average annual death rate of 15·7 per 1,000 persons living. In Glasgow the rate was 16·8; and in Edinburgh it was 16·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in eleven of the districts to 7·0 in Newry—the 7 deaths from all causes registered in that district comprising 2 from scarlatina. Among the 81 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 2 from enteric fever, and 3 from diarrhœa; and the 33 deaths in Cork comprise 1 from scarlatina, 2 from typhus, 1 from whooping-cough, and 2 from diphtheria.

In the Dublin Registration District the births registered during the week amounted to 179—78 boys and 101 girls—and the deaths to 153—78 males and 75 females.

The deaths represent an annual rate of mortality of 22·6 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 22·0 per 1,000.

Twenty-three deaths from zymotic diseases were registered, being 1 over the number for the preceding week, but 1 under the average for the twenty-eighth week of the last ten years. They comprise 4 from scarlet fever (scarlatina), 1 from typhus, 8 from whooping-cough, 1 from simple continued fever, 1 from enteric fever, 6 from diarrhœa, &c.

Fourteen cases of scarlatina were admitted to hospital, being 5 over the admissions for the preceding week. Nine scarlatina patients were discharged, 3 died, and 40 remained under treatment on Saturday, being 2 over the number in hospital on Saturday, July 7.

Three cases of typhus and 5 of enteric fever were admitted, against 1 case of the former and 8 cases of the latter disease admitted during the preceding week. Six cases of typhus and 15 of enteric fever remained under treatment in hospital on Saturday.

Twenty-three deaths from diseases of the respiratory system were registered, being 5 over the number for the preceding week, but 1 under the average for the twenty-eighth week of the last ten years. They comprise 7 from bronchitis, 9 from pneumonia or inflammation of the lungs, and 4 from pleurisy.

VITAL STATISTICS

For four Weeks ending Saturday, August 11, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	July 21	July 28	Aug. 4	Aug. 11		July 21	July 28	Aug. 4	Aug. 11
Armagh -	10·3	5·2	5·2	25·8	Limerick -	16·2	22·9	13·5	10·3
Belfast -	18·8	20·0	20·0	17·0	Lisburn -	14·5	9·7	0·0	19·3
Cork -	21·4	24·7	16·2	14·3	Londonderry	25·0	8·9	16·0	17·3
Drogheda	29·6	12·7	12·7	25·4	Lurgan -	20·5	10·3	20·5	25·7
Dublin -	18·8	17·3	20·2	18·8	Newry -	17·6	10·5	14·0	7·0
Dundalk -	30·6	21·8	4·4	8·7	Sligo -	19·2	19·2	9·6	24·1
Galway -	13·4	13·4	10·1	3·4	Waterford -	30·1	16·2	16·2	20·6
Kilkenny	25·4	29·6	29·6	8·5	Wexford -	17·1	21·4	17·1	4·3

In the week ending Saturday, July 21, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 15·8), was equal to an average annual death-rate of 16·0 per 1,000 persons living. In Glasgow the rate was 23·0; and in Edinburgh it was 16·2.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 19·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in eight of the districts to 8·7 in Dundalk—the 7 deaths registered in that district comprising 3 from scarlatina. Among the 82 deaths from all causes registered in Belfast are 1 from diphtheria and 2 from diarrhoea. The 33 deaths in Cork comprise 2 from measles, 1 from diphtheria, and 1 from diarrhoea. Among the 5 deaths in Newry are 2 from scarlatina, and the 6 deaths in Kilkenny comprise 1 from typhus and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 186—100 boys and 86 girls—and the deaths to 131—68 males and 63 females.

The deaths represent an annual rate of mortality of 19·3 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 18·8 per 1,000.

The number of deaths from zymotic diseases registered is 20, being 6 below the average for the corresponding week of the last ten years, and 3 under the number for the week ended July 14. The 20 deaths comprise 1 from measles, 3 from scarlet fever (scarlatina), 1 from typhus, 5 from whooping-cough, 1 from ill-defined fever, 3 from enteric fever, 1 from diarrhoea, 1 from dysentery, 1 from erysipelas, &c.

Nine cases of scarlatina were admitted to hospital, being 5 under the admissions for the preceding week. Six scarlatina patients were discharged, 2 died, and 41 remained under treatment on Saturday.

Three cases of typhus and 6 of enteric fever were admitted to hospital, against 3 cases of the former and 5 of the latter disease admitted during the preceding week. Six cases of typhus and 19 of enteric fever remained under treatment in hospital on Saturday.

The only small-pox patient in hospital was discharged in the course of the week.

Twenty-six deaths from diseases of the respiratory system were registered, being 6 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the week ended July 14. They comprise 14 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, July 28, the mortality in twenty-eight large English towns, including London (in which the rate was 15·9), was equal to an average annual death-rate of 15·8 per 1,000 persons living. In Glasgow the rate was 16·9; and in Edinburgh it was 13·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 18·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in eight of the districts to 13·1 in Dundalk—the 5 deaths from all causes registered in that district comprising 3 from whooping-cough. Among the 87 deaths from all causes registered in Belfast are 3 from scarlatina, 1 from whooping-cough, 1 from simple continued fever, and 8 from diarrhoea. The 38 deaths in Cork comprise 3 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 154—79 boys and 75 girls—and the deaths to 122—53 males and 69 females.

The deaths represent an annual rate of mortality of 18·0 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 17·3 per 1,000.

Only 11 deaths from zymotic diseases were registered, being 14 below the average for the corresponding week of the last ten years, and 9 under the number for the week ended July 21. The 11 deaths comprise 4 from scarlet fever (scarlatina), 1 from typhus, 1 from whooping-cough, 1 from enteric fever, 1 from dysentery, &c.

Nine cases of scarlatina were admitted to hospital, being equal to the admissions for the preceding week. Eight scarlatina patients were discharged, 1 died, and 41 remained under treatment on Saturday.

Four cases of typhus and 7 of enteric fever were admitted to hospital, against 3 cases of the former and 6 of the latter disease admitted during the preceding week. Eight cases of typhus and 20 of enteric fever remained under treatment in hospital on Saturday.

Eighteen deaths from diseases of the respiratory system were registered, being 2 under the average for the corresponding week of the last ten years, and 8 under the number for the week ended July 21. They comprise 7 from bronchitis, 7 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, August 4, the mortality in twenty-eight large English towns, including London (in which the rate was 15·9), was equal to an average annual death-rate of 16·0 per 1,000 persons living. In Glasgow the rate was 18·2; and in Edinburgh it was 15·6.

The average annual death-rate represented by the deaths registered

last week in the sixteen principal town districts of Ireland was 18·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in nine of the districts to 16·9 in Kilkenny. The 7 deaths from all causes registered for that district comprise 4 from so-called simple continued fever. Among the 87 deaths from all causes registered in Belfast are 3 from scarlatina, 1 from diphtheria, and 7 from diarrhoea; and the 25 deaths in Cork comprise 1 from measles and 1 from typhus.

In the Dublin Registration District the births registered during the week amounted to 186—96 boys and 90 girls—and the deaths to 143—84 males and 59 females.

The deaths represent an annual rate of mortality of 21·1 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 20·2 per 1,000.

Twenty-four deaths from zymotic diseases were registered, being 5 below the average for the corresponding week of the last ten years, but 13 over the number for the week ended July 28. The 24 deaths comprise 3 from scarlet fever (scarlatina), 11 from whooping-cough, 2 from simple continued and ill-defined fever, 4 from enteric fever, 1 from diarrhoea, 1 from erysipelas, &c.

Thirteen cases of scarlatina were admitted to hospital, being 4 over the admissions for the preceding week. Nine scarlatina patients were discharged; 1 died, and 44 remained under treatment on Saturday, August 4.

No cases of typhus, and only 2 cases of enteric fever were admitted to hospital, against 4 cases of the former and 7 cases of the latter disease admitted during the preceding week. Eight cases of typhus and 20 of enteric fever remained under treatment in hospital on Saturday.

Sixteen deaths from diseases of the respiratory system were registered, being 2 under the average for the corresponding week of the last ten years, and 2 under the number for the week ended July 28. They comprise 8 from bronchitis, and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, August 11, the mortality in twenty-eight large English towns, including London (in which the rate was 18·0), was equal to an average annual death-rate of 17·6 per 1,000 persons living. In Glasgow the rate was 16·4; and in Edinburgh it was 14·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 16·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in eight of the districts to 19·2 in Sligo—the 5 deaths from all

causes registered in that district comprising 3 from measles and 1 from scarlatina. Among the 74 deaths from all causes registered in Belfast are 2 from whooping-cough, 1 from simple continued fever, and 6 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 179—93 boys and 86 girls—and the deaths to 131—54 males and 77 females.

The deaths represent an annual rate of mortality of 19·3 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 18·8 per 1,000.

Fifteen deaths from zymotic diseases were registered, being 15 below the average for the corresponding week of the last ten years, and 9 under the number for the week ended August 4. The 15 deaths comprise 3 from scarlet fever (scarlatina), 3 from whooping-cough, 1 from simple continued fever, 1 from enteric fever, 4 from diarrhoea, &c.

Three cases of scarlatina were admitted to hospital during the week, being 10 under the admissions for the preceding week. Ten scarlatina patients were discharged, 1 died, and 36 remained under treatment on Saturday, being 8 under the number in hospital at the close of the preceding week.

Two cases of typhus and 3 of enteric fever were admitted to hospital during the week. Nine cases of typhus and 22 of enteric fever remained under treatment in hospital on Saturday.

Thirteen deaths from diseases of the respiratory system were registered, being 9 under the average for the corresponding week of the last ten years, and 3 under the number for the week ended August 4. They comprise 4 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 4 from croup.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of July, 1888.

Mean Height of Barometer,	-	-	-	29·747 inches.
Maximal Height of Barometer (on 12th, at 9 p.m.),				30·178 "
Minimal Height of Barometer (on 2nd, at 7 p.m.) -				29·200 "
Mean Dry-bulb Temperature,	-	-	-	56·6°.
Mean Wet-bulb Temperature,	-	-	-	54·1°.
Mean Dew-point Temperature,	-	-	-	51·9°.
Mean Elastic Force (Tension) of Aqueous Vapour, -				·388 inch.
Mean Humidity, -	-	-	-	84·9 per cent.
Highest Temperature in Shade (on 21st), -				68·7°.

Lowest Temperature in Shade (on 11th),	-	-	42·9°.
Lowest Temperature on Grass (Radiation) (on 11th),			36·4°.
Mean Amount of Cloud,	-	-	74·2 per cent.
Rainfall (on 22 days),	-	-	3·881 inches.
Greatest Daily Rainfall (on 27th),	-	-	·509 inch.
General Directions of Wind,	-	-	W., N.W, N.E.

Remarks.

A wet, cloudy, cold month—almost as wet and cold as July 1879, with which phenomenal month that now under review had many features in common. It is to be noted that, whereas July of 1887 was cold and wet in Scandinavia, very fine and hot in the British Isles and Central Europe, just the reverse held good as regards July 1888, which was favourable in Northern Europe. The cold weather of the 10th and 11th was, perhaps, without a parallel.

In Dublin the mean temperature (57·3°) was much below the average (60·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 56·6°. In the twenty-three years ending with 1887, July was coldest in 1879 (the "cold year") (M. T. = 57·2°). It was warmest in 1887 (M. T. = 63·7°), and in 1868 (the "warm year") (M. T. = 63·5°). In 1886, the M. T. was 61·0°. From this, 1887, proves to have been the warmest since the present records commenced, whilst July, 1888, was almost the coldest.

The mean height of the barometer was 29·747 inches, or 0·175 inch below the average value for July—namely, 29·922 inches. The mercury marked 30·178 inches at 9 p.m. of the 12th, and fell to 29·200 inches at 7 p.m. of the 2nd. The observed range of atmospherical pressure was, therefore, 0·978 inch—that is, a little less than an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 56·6°, or 0·5° above the value for June, 1888; that calculated by Kaemtz's formula—viz., $\text{min.} + (\text{max.} - \text{min.} \times \cdot 41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 56·3°, or 3·8° below the average mean temperature for July, calculated in the same way, in the twenty years, 1865–84, inclusive (59·6°). The arithmetical mean of the maximal and minimal readings was 57·3°, compared with a twenty-three years' average of 60·8°. On the 21st the thermometer in the screen rose to 68·7°—wind S.W.; on the 11th the temperature fell to 42·9°—wind N.N.W. The minimum on the grass was 36·4° on the latter date. The rainfall was as much as 3·881 inches, distributed over 22 days. The average rainfall for July in the twenty-three years, 1865–87, inclusive, was 2·350 inches, and the average number of rainy days was 17·1. The rainfall and the rainy days, therefore, were decidedly above the average. In 1880 the rainfall in July was very large—6·087 inches on 24 days;

in 1871 also 4·391 inches fell on 28 days. On the other hand, in 1870, only ·539 of an inch was measured on 8 days, in 1869 the fall was only ·739 of an inch on 9 days, and in 1868 only ·741 of an inch fell on but 5 days.

A solar halo appeared on the 1st. High winds were noted on 9 days, but attained the force of a gale on only one occasion—viz., the 2nd. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In July, 1888, the maximum was 68·7°. There was a storm of thunder, lightning, and heavy rain on the 31st. Thunder was heard on the 4th, and lightning was seen on the evening of the 10th.

Although the month opened with a fair promise, the weather soon fell into a changeable, rainy and stormy condition. This lasted for several days, but from Thursday, the 5th, cool N.E. winds and finer weather prevailed in Scotland and Ireland, while it remained dull and cold in England. On the forenoon of Sunday, the 1st, long sprays of cirrus cloud, in which a solar halo appeared, crossed the sky in rapid motion from N.W. to S.E. As the day wore on, cloud increased and in the evening rain fell. Monday was wet, and a fresh W. gale sprang up in the evening. The next two days were showery. Thunder was heard on Wednesday forenoon, and the same evening luminous cirriform clouds showed on the northern horizon. Thursday was fine in Ireland, thundery in England. At night a sea fog came in along the Dublin and Wicklow coasts. During the last two days of the week a cool N.E. wind, and dry, sometimes bright weather prevailed. In Dublin the mean height of the barometer was 29·664 inches—pressure ranging between 29·200 inches at 7 p.m. of Monday, and 30·086 inches at 9 p.m. of Saturday. The mean temperature, deduced from readings of the dry bulb thermometer, taken daily at 9 a.m. and 9 p.m., was 56·8°, or 4° below the average for the time of year. The highest shade temperature was 67·9° on Monday; the lowest was 46·5° on Sunday. Rain fell on four days to the amount of 1·063 inches, of which ·463 inches was registered on Sunday night.

The second week (8th–14th) was memorable for a “cold spell,” which is, perhaps, without a parallel in July. It occurred in connection with a complex system of low atmospherical pressure which travelled slowly from the north of Scotland to the Baltic between Monday and Friday. In connection with this system, a subsidiary depression travelled quickly from N.N.W. to S.S.E. across Great Britain on Tuesday and Wednesday, causing squally N.W. to N. winds and heavy falls of cold rain, hail, and even snow. At 8 a.m. of Wednesday the thermometer stood at 44° in London, and the highest temperature there during the day was 54°. In Dublin, heavy cold showers fell on Tuesday evening, and at 9 p.m. the temperature was only 46·1°. From Thursday the air was warmer, but conditions were at no time settled during the week. In Dublin the

mean height of the barometer was 30·047 inches, pressure ranging between 30·178 inches at 9 p.m. of Thursday and 29·893 inches at 9 a.m. of Monday. The mean dry bulb temperature, from observations taken at 9 a.m. and 9 p.m. daily, was 56·3°. On Friday the thermometer in the screen rose to 68·4°, on Wednesday it fell to 42·9°. Rain was registered on two days, the total quantity being ·062 inch, of which ·049 inch was measured on Tuesday. Hail and lightning were observed near Dublin on Tuesday evening.

For the third week (ending Saturday, the 21st) the record is again one of changeable, cloudy, weather, occasional heavy rainfalls, and low temperatures for the season. In England the rain was often accompanied with thunder and lightning. The broken weather, as in previous weeks, extended to France and central Europe generally; but it is worthy of note that in Scandinavia clear skies and high temperatures prevailed day after day, and the weather was almost rainless. During the week the barometer was lowest, in a series of irregular atmospherical depressions, over the United Kingdom, France, and Germany—it was relatively high both in the extreme north of Europe and over the Iberian Peninsula in the south. In Dublin the mean height of the barometer was 29·706 inches—pressure ranging from 29·442 inches at 3 30 p.m. of Monday to 29·882 inches at 9 a.m. of Thursday. The mean dry bulb temperature deduced from daily readings at 9 a.m. and 9 p.m. was 57·7°. Temperature in the screen rose to 68·7° on Saturday and fell to 52·8° on Sunday. The rainfall amounted to ·912 inch, distributed over six days. Of this quantity ·329 inch fell on Thursday.

Very broken, wet, cold weather again prevailed throughout the fourth week (22nd–28th). Rain fell on every day, and as a rule the sky was densely clouded, shutting out all solar heat. Atmospherical conditions in the United Kingdom remained cyclonic. The barometer was generally lowest off the W. and N. coasts of Ireland, but on Wednesday and again on Friday the centres of well-formed depressions passed in a northeasterly direction across the S.E. of this country. These systems caused temporary N.E. winds while they were passing, but S. to W. and N. W. winds prevailed for the most part. In England and the north of Ireland thunderstorms occurred at times. In Dublin the mean height of the barometer was only 29·570 inches—pressure ranging from 29·392 inches at 4 p.m. of Monday to 29·810 inches at 9 p.m. of Saturday. The mean dry bulb temperature, deduced from daily readings at 9 a.m. and 9 p.m., was only 56·9°. Temperature in the screen rose to 66·7° on Tuesday and fell to 49·5° on Friday. Rain fell on every day during the week—the total quantity being 1·347 inches, of which ·509 inch was measured on Friday and ·364 inch on Tuesday.

The weather remained cold and broken during the last three days—the 29th and 30th were dull, cold, damp days. On the 31st some hours

of bright sunshine occurred, but in the afternoon a sharp thunderstorm passed over Dublin from W.N.W.

The rainfall in Dublin during the seven months ending July 31st has amounted to 15·994 inches on 109 days, compared with 7·935 inches on 80 days during the same period in 1887, and a twenty-three years' average of 14·749 inches, on 112·8 days.

At Greystones, Co. Wicklow, the rainfall in July, 1888, was 4·52 inches, distributed over 12 days. Of this quantity, 1·07 inches fell on the 24th, ·96 inch on the 27th, and ·53 inch on the 18th. Since January 1, 19·43 inches of rain have fallen at Greystones, on, however, only 75 days.

PERISCOPE.

A CASE OF CANCER OF THE LARYNX, WITH REMARKS ON LARYNGECTOMY.

At a recent meeting of the French Society of Otology and Laryngology. Doctor J. Charazac, of Toulouse, reported an interesting case of cancer of the larynx. The patient (aged sixty) consulted Dr. Charazac on the 1st of October, 1887. There was no history of syphilis; general state of health excellent; easy respiration; cough and expectoration absent: strong-smelling breath, but not fœtid. Aphonia had been present for the past eighteen months. On examination with the laryngoscopic mirror Dr. Charazac found congestion of the epiglottis and of the left side of the larynx—the ordinary symptoms, in fact, of chronic laryngitis. To the right, at the level of the vocal cord, could be seen a greyish ulceration, tolerably deep, occupying the centre of a tumefaction which closed the half of the glottis. Dr. Charazac diagnosticated the case as cancer of the larynx. The progress of the disease, in spite of energetic antisyphilitic treatment, confirmed this diagnosis, and on the 19th of February, 1888, tracheotomy became indispensable to prevent asphyxia. The operation of extirpation of the larynx was proposed, but was not agreed to by the patient. Touching this case, Dr. Charazac compares the results obtained by palliative tracheotomy with those given by extirpation of the larynx in cancer. At the first tracheotomy appears preferable, as it enables the patient to live six or eight months longer, whereas in extirpation of the larynx two-thirds of the patients succumb either to the operation or to a rapid recurrence of the growth. But if the statistics are so unfavourable, this depends (after the author) on the fact that surgeons have not always paid sufficient attention to the indication furnished by the state of the patient and the nature of the disease. All cases of cancer of the larynx should not be operated on. Extirpation ought to be performed only in the case of cancer limited strictly to the interior of the vocal organ while the general condition of the patient

is yet good, and when as yet the glands are not contaminated. Partial extirpation gives better results than those furnished by complete laryngectomy. Whence the necessity of early diagnosis, which it is easy to make in many cases. If these considerations are borne in mind the number of successes obtained by extirpation will doubtless go on increasing.—*Revue Mensuelle de Laryngologie*, Juin, 1888.

SARCOMA OF THE TONSIL; REMOVAL BY EXTERNAL INCISION.

DR. RICHARDSON (*Boston Med. and Surgical Journal*) removed a sarcomatous left tonsil from a woman, aged sixty years, by an external incision, three inches in length, made along the anterior border of the sternomastoid muscle. A careful dissection was made to get under the parotid behind which the new growth was found encapsulated. The tumour was lobulated, and had finger-like projections running in various directions. It partly surrounded the styloid process and was attached to it, and from there extended inward to the middle of the pharynx. It was covered in the throat by the mucous membrane alone. A large portion of the tumour was shelled out, and the rest removed by dissection. The portion projecting into the pharynx was thoroughly removed, leaving nothing but the mucous membrane of the pharynx between the fingers when one was in the pharynx and the other in the wound. The upward growth of the mass in and between the pterygoid plates and its attachment to the base of the skull made its complete removal very difficult. Three days after operation the patient could eat and talk without trouble. Dressings changed to phenol pad on account of slight suppuration along track of tube. Twenty-two days after the operation she was discharged cured.—*Am. Pract. and News*, March 31, 1888.

CHOLECYSTECTOMY.

At the third Congress of Surgery in Paris—12th–17th of March, 1888—Dr. Thiriart, of Brussels, read a paper on cholecystectomies, of which the following is a summary from the *Medical News* of the 28th of April:—In July, 1887, in a lady aged thirty, he extirpated the biliary vesicle. She had suffered for six years from terrible hepatic colics, which nothing could relieve. The gall-bladder contained no calculi, was enclosed by the liver and duodenum, to which it adhered firmly. The dissection was a difficult one, as in certain parts the duodenum was deprived of its serous tissue. Finally, the gall-bladder was extirpated. The cure was rapid, and the patient has had no return of the trouble. Out of 6 cases of cholecystotomies by Spencer Wells's methods, there have been 3 deaths, 50 per cent., and one return of the trouble; out of 72 cases of ordinary cholecystotomies—that is, with suture of the gall-bladders on the abdominal walls—13 deaths, or 18·05 per cent.; 59 operated upon have survived. There has been

one return, and it had a persistent fistula. We had, then, 53 radical cures, which gave 48·6 per cent. of complete cures. We know of 22 cases of cystectomies with 3 deaths after the operation, which makes 13·65 per cent. Of these 3 failures, one is attributed to a cerebral tumour; the second was a perforation of the cystic canal by a calculus. In the third case there were two calculi in the ductus communis choledochus, one was pushed back, the other crushed, according to Lawson Tait's method. Cholecystectomy gives us, then, leaving the first case out, a mortality of 9·98 per cent., and all the operated patients were cured. In accordance with these results he thinks we must interfere without hesitation. The gall-bladder is of no use in the economy, it can be extirpated without inconvenience, and if we could demonstrate the existence of a painful cholecystitis, or irritable gall-bladder, as we have painful cystitis and irritable cystitis, the indications of cholecystectomies could be very much extended, one would have to resort to it in all painful crises having for their origin an irritable gall-bladder.

A CASE OF SPONTANEOUS GANGRENE OF THE PENIS.

DR. TROISFONTAINES reports a case in the *Annales de la Société Médico-Chirurgicale de Liège*, March, 1888. The subject, a young man, was healthy, and living under satisfactory hygienic conditions. June 6th, 1887, he became aware of a pricking sensation in a limited space, on the dorsal aspect of the penis, close to the glans. The pricking sensation increased to lancinating pain and the prepuce became œdematous as far as the seat of pain. The pain and swelling greatly increased, and there was considerable sanious discharge from the preputial orifice of a very fœtid character. The penis, for its anterior two-thirds, had become enormously enlarged, measuring over 19 cm. in circumference. At the point where the pain had first appeared, was a bluish white area, cold and insensitive, the anterior portion of the prepuce was discoloured on its dorsal aspect. Dr. Troisfontaines immediately divided the prepuce as far as the gangrenous spot, and subsequently prolonged the incision almost to the root of the organ. The gangrene involved the fascia and cellular tissue extensively, and the destructive process had excavated the corpus cavernosum, in which several blood clots were found. The gangrenous tissues were removed with the scissors, the wound irrigated with a disinfectant solution, and a dressing of charpie and iodoform applied. The local and general condition at once improved, and there was no further extension of the disease.—*Sacramento Medical Times*.

FÆCAL FISTULA OF THE UMBILICUS.

M. PEDENAT has successfully treated by electrolysis a case of fæcal fistula of the umbilicus. The patient had formerly suffered from intestinal obstruction. Seven sittings completed the cure.—*L'Union Médicale*.

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OCTOBER 1, 1888.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*On Traumatic Subdural Abscess of the Brain.** By
SIR WILLIAM STOKES, M.D., Ch.M., Univ. Dub.; F.R.C.S.I.;
Surgeon to the Meath Hospital and County Dublin Infirmary;
Professor of Surgery, Royal College of Surgeons, Ireland; Sur-
geon to the Richmond Surgical Hospital; ex-President, Royal
College of Surgeons, Ireland.

A REFERENCE to the statistical records of Abercrombie, Sir William Gull, and Dr. Sutton, will furnish evidence that of cerebral abscesses the traumatic forms are those which occur with least frequency. Thus of eighty-six cases collected by them, only twenty resulted from injury, or less than one-fourth the entire number. Of these the subdural are the rarest, and it is to this form that I desire particularly to invite attention.

Until comparatively recently cerebral abscess has been considered, as a rule, a necessarily fatal condition. Undoubtedly high authorities such as Abercrombie, Griesinger, Lebert, and other accurate and trustworthy observers regarded them as out of the range of practical medicine, and the fact that this hitherto hopeless condition has of late to so great an extent been rescued from the confessed impotence of medicine, must be regarded as not the least among the modern triumphs of surgery. Two circumstances have doubtless conduced to bring about this desirable result: one, the greater knowledge that has been recently acquired of the localisation of

* Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, February 24, 1888.

cerebral function, injury, and disease, and the other, the application of the principle of antisepticism, which deprives to so large an extent surgical operative interference of so many of its risks and dangers. The surgeons' hands are no longer, as was formerly the case, weakened and paralysed by the dread of meningeal or encephalic trouble resulting directly from the operation of trephining.

It must be admitted, I think, that the advantages to be derived from trephining in cases of cerebral abscess are more likely to be conspicuous than when the operation is performed for other conditions causing pressure. I allude more particularly to those cases in which it is produced by some solid tumour or is hæmorrhagic in character. The facilities for localising abscess are, as a rule, greater than in these cases, and there is less risk of the subsequent occurrence of secondary complications at a period more or less remote from the time of the operation.

The cases of subdural traumatic cerebral abscess that have been operated on have been comparatively few. I have, in fact, ascertained only eleven such, operated on respectively by Dupuytren, Roux, Cæsar Hawkins, Rentz, Hulke, Sir J. Paget, Marshall, Lee, Macewen and myself. Of these eleven cases it is interesting and encouraging to note that in five the recovery was complete; in one there was recovery, but with loss of sight and a subsequent tendency to epileptic seizures, leaving only five out of the eleven in which the operation was unattended with success.

The rarity with which the operation has been undertaken has, doubtless, to a large extent been due to the difficulties, now happily diminished, of localisation, and also to a lack of confidence in dealing surgically with such conditions which of late years we have obtained from a clearer and more thorough appreciation of antisepticism. In opposition to this, however, it may be said that perhaps the most brilliant instance on record of successful operative efforts in a case of traumatic cerebral abscess occurred in the pre-antiseptic era. I allude to the case operated on by Dupuytren, whose bold interference, notwithstanding its successful issue, has been thoughtlessly described as reckless and hap-hazard. For example, Mr. Lawrence^a observes, in reference to cerebral abscess, that "surgery, speaking through Sir A. Cooper and Sir B. Brodie, declares itself as impotent as medicine for the cure of such a malady, for although it is recorded that on one occasion Baron Dupuytren actually punctured the brain to the depth of an inch, after which the patient recovered, the result

^a *Edinburgh Medical Journal*, 1869.

must be regarded more in the light of a specially lucky chance than as constituting a precedent which would warrant a like procedure in similar circumstances." Dupuytren's operation would, in truth, be more fittingly described as one suggested by a surgical genius such as few, if any, have ever before or since possessed.

In connection with the subject of cerebral abscess, the two following cases, which were under my care in the Richmond Surgical Hospital, are noteworthy examples; and the details connected with them, taken with the others to which I have already alluded, will, I trust, aid in arriving at some definite conclusions which possibly may guide us in our future appreciation and management of similar cases. The majority of them, I may mention in passing, are signally illustrative of the pathological fact, first noted by Dease, in reference to the usually late appearance of cerebral trouble after cranial traumatisms:—

CASE I.—The first of these cases occurred in the autumn of 1869. The patient, a strong, powerfully-built young man, aged twenty-six, was admitted into the Richmond Surgical Hospital, under my care, in September of that year. He had gone to the North of England during the summer to obtain employment at harvest operations, and during a dispute with some of his fellow-labourers, received a blow on the side of his head, over the left temple, with the handle of a reaping-hook. He was stunned by the blow, but soon recovered, and no other immediate bad consequence of the injury occurred. For some weeks after this he was able to continue his work, suffering from nothing but occasional headaches. He then returned to Ireland, and shortly after landing on the quay at the North Wall, got, it was said, a "weakness." He fell and became insensible. He was then brought at once to the Richmond Hospital, and I was promptly summoned. I found the patient in a state of complete insensibility; myosis extreme, and pulse slow. He had retention of urine; his respiration was not stertorous, however, but the paralysis, motor and sensory, was complete. Shortly after his admission into hospital, assisted mainly by my friend the late Dr. Henry Curran, I trephined above and behind the left temple, at the situation of the cicatrix. On removing the bone there was a distinct bulging of the dura mater through the opening. I made an incision into it and evacuated about a drachm of clear, straw-coloured serous fluid. There was no appearance, however, of pus, which was, I need hardly say, a source of great disappointment to me. It was remarkable, however, that even the relief from pressure obtained by the trephining and evacuation of a small amount of serous fluid was sufficient to restore a certain amount of sensibility, as was evidenced on touching the conjunctiva. The operative measures I adopted in this case did not

go any further, and the patient was removed to bed. The following day he died. At the autopsy an abscess containing fully two and a half or three ounces of healthy cream-coloured pus, and lying directly under the dura mater, was found situated immediately behind the situation where I trephined. Had I gone the twentieth of an inch further back I should unquestionably have opened the abscess.

This case, I need hardly observe, occurred in the pre-antiseptic and pre-aspiration era, and I had not the confidence that the one and the assistance that the other now affords; but, persuaded as I was that I had to deal with a case of intracranial suppuration, it will ever be a source of regret to me that I desisted from the course to which I was instinctively prompted—viz., to make a second, or if necessary a third, trephine opening. All the probabilities are that had I done so the matter would have been reached, and the patient's life possibly, indeed probably, saved.

In the following case the operation of trephining was attended with a more satisfactory result:—

CASE II.—John Brophy, aged twenty-four, by occupation a wall-plasterer, was admitted into the Richmond Surgical Hospital on July 29th, 1887. At the time of his admission he was in a heavy drowsy condition. Between six and seven weeks before his admission into hospital, he was, on a Saturday night, during a dispute with some companions, struck on the head with a poker. For a small scalp wound, which apparently was the only injury which resulted from the blow, he went to Jervis-street Hospital, where the wound was dressed. The patient was not detained in hospital, and on the following Monday morning went to work as usual. He continued at his employment continuously until July 17th, but for some days before this his appetite had been failing and he had been feeling rather sick and drowsy. He complained also of dizziness. On the night of the 17th he was attacked with vomiting, which continued off and on for a week. Shortly after this it was observed that he had considerable difficulty in speaking and making himself understood. He was admitted into hospital on July 29th, and his condition then was as follows:—There was a small wound not quite healed at the upper part of the forehead, about an inch to the left side of the mesial line. On passing a probe into this, denuded bone could be felt, and apparently a slight depression. The patient was extremely drowsy, and when sitting down at once fell asleep, but could be aroused by being spoken to in a loud voice. He answered, however, only in monosyllables, and could make no attempt at describing either what had happened to him or what he was suffering from. His pulse was 42; respiration and temperature normal; pupils even, but contracted. On the 31st his condition was

much worse; he could be roused only with the greatest difficulty; his water was passed involuntarily, and paralysis in the extremities, both of motion and sensation, was well marked; his breathing, however, still remained normal, no evidence of stertor being in the slightest degree present. Power of deglutition, too, was found at this time to be lost, and as the day wore on, the stupor, from which it was found perfectly impossible to rouse him, became more intense. At 2 o'clock, p.m., he got a convulsive seizure, confined to the right side: the leg and arm were rigidly extended, and the hand strongly clenched with the thumb turned under the fingers. These convulsive seizures lasted about three minutes, during which the pulse rose from 40 to 100, and the respirations became rapid, reaching 30 in the minute; the pupils contracted to pins' points; the cornea perfectly insensible, and the forehead bathed in perspiration. On the convulsion ceasing, it was found that it could be reinduced by tickling the soles of the feet, an experiment which was, in consequence, not repeated.

The case was clearly *in extremis*, and although I considered the chance of relieving the patient by operation was, under the circumstances, a remote one, I deemed it possible that relief might be afforded by trephining, and that the operation should be performed without delay. In this view I was strengthened by the coinciding opinions of my colleagues, Drs. Thomson and Corley, who examined the case with me, and subsequently assisted at the operation.

At 5 30 p.m. I operated, and on raising a triangular flap of pericranium over the situation of the wound I found that there was no fracture with depression, but a small piece of the outer table of the bone was necrosed and completely detached. This, acting as a foreign body and source of irritation, had doubtless prevented the external wound from closing. Having removed the detached fragment, I next applied the crown of a trephine so as to include the situation where the loosened piece of bone had been found. On raising the bone and exposing the dura mater no evidence of abscess was found. Feeling confident, however, I could not be far from the source of pressure, I punctured the dura mater with the needle of a hypodermic syringe, and passed it down for about the eighth of an inch, and on drawing up the piston of the instrument experienced disappointment at getting a negative result. I then passed the needle still deeper, and again failed to reach the matter. I was about to withdraw the instrument and abandon my efforts to relieve the patient, when, strengthened by the concurrence of my colleagues, I sank the needle down as far as it could go. On drawing up the piston once more I gladly perceived a few drops of pus in the glass receiver. I then freely opened the dura mater, and using the needle as my guide, I passed the blade of a narrow bistoury down to the abscess, some of the contents of which appeared soon at the surface of the wound. Acting on Mr.

Thomson's suggestion, I got a piece of India-rubber tubing, and passed one end down to the abscess, and attaching the other to the nozzle of a medium-sized glass syringe, I succeeded in drawing or pumping up a quantity of dark-coloured grumous pus. Of this I obtained one ounce and two drachms. I then filled a glass syringe with a one per cent. solution of carbolic acid, and thoroughly washed the abscess cavity, removing subsequently the carbolic solution by drawing it up in the way I had done with the pus. A drainage-tube being then left in, I replaced the flap, uniting the edges with numerous catgut sutures, and dressed the wound with sal-alembroth gauze and iodoform wool.

As regards the situation of the trephine opening, I may mention that it was three-quarters of an inch to the left of the mesial line, and one inch in front of the coronal sutures. It corresponded to a point between the supero- and meso-frontal convolutions. In order to ascertain the size and direction of the abscess cavity I passed my left little finger into it; I could determine its limitation anteriorly, laterally, and inferiorly. Externally and inferiorly its limitation must have been formed by Broca's lobe, but posteriorly and inferiorly, although I passed my little finger as far as possible, its limit was not reached, and my belief—one shared in by Professor Cunningham—is that the abscess possibly involved the lateral ventricle.

The beneficial effects of the operation were almost immediate. His pulse from being 40 per minute rose to 120; he opened his eyes and looked about intelligently. After the wound was dressed he made an attempt to speak, and when asked if he felt better, answered, with tolerable distinctness, "Yes." In about half an hour I removed the patient to his ward, and for some hours he remained on his back quite quiet, the only disturbance being to make him take, from time to time, some warm milk, which we found him able to swallow without difficulty. Towards evening he turned on his side of his own accord and fell into a quiet sleep. In this condition I found him on making my visit between 9 and 10 p.m.

The next morning the patient was able to talk quite clearly and rationally; he passed water of his own accord. I dressed the wound, but did not remove the drainage-tube; the patient's condition was in every way most satisfactory. On the day following, there being no discharge through the dressings, and the pulse and temperature being all that I could desire, I left the dressings undisturbed. The patient's bowels moved quite naturally. From this time the progress of the case towards recovery was uninterrupted. On August 6th I removed the drainage-tube, the wound, except at the point where the tube had been, being completely healed.

On August 13th the patient was up and able to walk about the ward, free from all pain and feeling quite strong. Shortly after this I trans-

ferred him to the House of Rest at Merrion, where he remained for five weeks, at the end of which time he was able to return to his usual avocation. The final outcome of this remarkable case, if disappointing, is of much interest. For nearly nine months after the operation the patient remained perfectly well, and quite able to follow his usual occupation as a wall-plasterer. It was then stated that he got a "fit," from which he recovered, and he returned the following day to his work. The morning after this he was found in bed in a state of complete insensibility, and he was then brought for the second time to hospital. Right hemiplegia was complete, and both plantar and patellar reflexes were lost; his face was pale, but lips deeply cyanosed. Pulse, 160; respiration, 60; temperature, 101·8°. He had frequent convulsive seizures after he came to hospital.

Thinking it possible that these symptoms might be due to the formation of a second abscess, I reflected the flap I made originally at the trephining operation, and, on opening the dura mater, through some thickened cicatricial tissues, gave exit to a quantity of bloody serum; I then passed a blunt-pointed director downwards and backwards to a distance of 5 cms., but did not reach any pus or other fluid. A director was then passed downwards and slightly forwards, when a considerable quantity of serous fluid came gushing out. From this situation I removed six drachms of sero-sanguineous fluid, dotted with white-coloured flakes. The effect of the operation was to reduce the pulse from 150 to 100, and the temperature from 105·1° to 104·6°. The patient, however, never rallied, and died the day following.

Before attempting to draw any conclusions in reference to the signs and symptoms of traumatic cerebral abscess, it would be desirable to take a survey—which must necessarily be a very rapid one—of the other similar cases to which I have already alluded. The first of these I would mention is the well-known case described by Dupuytren, one remarkable in many ways, but more particularly from the great and exceptional length of time that elapsed between the receipt of the injury and the development of signs of cerebral pressure. The patient was a young man, who was struck on the top of his head with a knife which broke, and a portion of it remained in the perforating wound. This healed, and all went on well for several years, save some occasional pains about the scar. Symptoms of compression suddenly supervened, and he was brought into hospital in a state of stupefaction. Dupuytren ascertained the existence of the foreign body under the scar, and trephined, but without relief. The dura mater was then opened, a deep incision made, and the contents of a large abscess evacuated. This brilliant operation was followed by complete recovery.

In reference to the great length of time that in Dupuytren's case elapsed between the receipt of the injury and the symptoms of brain pressure from abscess, I may mention that another case—one, however, which was not operated on—has been recorded by Mr. Lawrence, in which the injury of the head preceded the death of his patient from abscess in the brain by almost five years.

M. Roux published a case in which, after trephining, he opened the dura mater, but with a negative result. He proceeded no further, and the patient died. The autopsy revealed a large abscess below and behind the spot trephined, immediately under the cortical substances of the brain.

Mr. Cæsar Hawkins has also recorded an instance of subdural cerebral abscess, in which the symptoms did not manifest themselves until a month had passed from the date of the injury. After trephining, the dura mater was found in a sloughy state, and a large opening in it, through which escaped a quantity of matter. The patient died five days after the operation, and an abscess was found on the back part of the left hemisphere, reaching down to the left ventricle, into which it had nearly opened.

A case of cerebral abscess, resulting from a gunshot injury, is recorded in the *American Journal of the Medical Sciences*, by Drs. C. Fenger and E. W. Lee, of Chicago. The ball did not penetrate the cranium, but fractured the margin of the orbit, and passed upwards and outwards for two cms. Here it lodged, and was cut down upon and extracted. In a *précis* of the paper by my colleague, Dr. Thomson, in the *Dublin Journal of Medical Science*, 1884, it is stated that in forty hours the patient had intense headache and pain in the orbit, he vomited, had some exophthalmos, and there was loss of vision. The fracture was then exposed, some bone removed, and a small abscess in the orbit evacuated. A month after the injury he was able to leave the house, but he soon felt faint, and had to return home. A day later he became drowsy, with a pulse of 54, and finally comatose. The temperature was normal; there was no paralysis.

In this case trephining was performed, the dura mater opened, and a succession of punctures made in different directions and of varying depths before the matter was discovered. It was found at a depth of two and a half inches; about an ounce and a half of pus was withdrawn. A week subsequently the patient again became comatose, and the operation was repeated, this time the needle being inserted to a depth of fully three inches, when a small

quantity (about half a teaspoonful) of thick yellow pus was removed. In seven weeks from this time he resumed his duty as a policeman. Some months later, in July and again in December, he had epileptic seizures, but it was not stated whether he remained liable to these subsequently.

A remarkable, and, as far as I can ascertain, the first, case in which exploration and aspiration were employed in dealing with cerebral abscesses was a case published by Rentz, noted in Fenger and Lee's paper,* in which aspiration was performed in a case of cerebral abscess twice daily for a period of twelve weeks, with complete ultimate recovery. The abscess was the result of a punctured wound inflicted with a knife, which, as in Dupuytren's case, broke, and the point was left impacted in the tissues. The wound was over the right frontal region. Eleven days subsequently to the receipt of the wound, symptoms of cerebral pressure having set in, the wound was reopened and the point of the knife extracted. This was followed by the escape of foetid matter. In this case trephining was not had recourse to, but the abscess was evacuated by aspiration through the wound, the operation being performed twice daily, this treatment continuing for the protracted period of twelve weeks. The result in this case was in every way satisfactory. There was no definite proof that the abscess was subdural, but from the account given by Rentz he was obviously of opinion that the abscess was one involving the brain substance.

For the purposes of exploration Rentz has recommended blunt-pointed needles as being less likely to injure the blood-vessels during their passage through brain tissue. The suggestion is, I think, a sound one, and deserving of adoption.

Mr. Macewen, of Glasgow, has had considerable experience in both epidural and subdural cerebral abscesses, having seen ten cases. Of these six were operated on, with three recoveries, of which only one, however, had a distinctly traumatic origin. The particulars of this case have not as yet been published, but Mr. Macewen states that the cerebral abscess showed itself a fortnight subsequently to the receipt of the injury, and was attended with the usual signs indicative of brain pressure. It was not situated below the wound, and its presence and position in the brain had to be determined by the exhibited symptoms.

In the "Medico-Chirurgical Transactions" for 1879, Mr. Hulke has published a case of traumatic cerebral abscess. The patient was

* American Journal of the Medical Sciences, July, 1884.

an errand boy, aged fifteen, who, hurrying out of a factory, stumbled against an iron fence by which his forehead was grazed; he was stunned, but soon recovered. For a month he remained at his employment, and then began to be troubled with nausea, and soon after to vomit occasionally. On admission into hospital five weeks after this injury, the symptoms were considered indicative of intracranial inflammation. The following day incomplete hemiplegia was observed, and this, with the other symptoms present, enabled Mr. Hulke to diagnosticate cerebral abscess. Trephining was performed, and a fine trocar pushed through the membranes into the brain; when at a depth of about an inch some thin greenish pus rose into the syringe. A free opening was then made with a narrow knife along the trocar, and a considerable quantity of pus evacuated; the hemiplegia and retching ceased immediately after the evacuation of the abscess. Although the boy's life was unquestionably saved by this operation, still the result of it cannot be said to have been satisfactory, for ultimately the patient became blind and subject to epileptic seizures.

Sir James Paget^a and Mr. Marshall^b have each published a case of traumatic cerebral abscess, in which they performed the operation of trephining. The result, however, in neither case was satisfactory, owing doubtless to the fact that the former was one of multiple cerebral abscess, and the other one of extensive meningeal inflammation and diffuse suppuration.

Among the points in these cases which are of special interest and deserving of consideration are—first, the ætiology of such cerebral abscesses, and also the remarkable latency of the symptoms usually connected with them. The two cases I have recorded in this communication do not—owing, doubtless, to the paralysis in both cases having been so profound—throw much light on the subject of the localisation of cerebral function; a subject which at present is so largely exercising the surgical mind. As regards their ætiology, we must, I think, accept the views held by my late colleague, Dr. M'Dowel, and also Sir W. Gull—namely, that the traumatic forms of these abscesses are mainly due to a primary phlebitic condition of the veins of the diploe, which vessels, from their intrasosseous position, are specially prone to absorb fluid, and that, as results of this, death of portions of the cranial wall occurs, and ultimately cerebral abscess.

^a Medical Times and Gazette, 1860.

^b Lancet 1857.

The symptoms connected with this condition must necessarily vary much. In the first place they depend largely on the locality in which the abscesses form. Thus it has been pointed out by Huguenin,^a whose remarks are quoted by Dr. J. Burney Yeo in his valuable paper on this subject,^b that when the abscess occurs in the temporal lobes "the difficulty of diagnosis is increased by the circumstance that no bands of fibres which are direct conductors of sensibility or motion pass through this lobe." An abscess, therefore, may attain a considerable size, and may cause general symptoms of compression before any distinct symptoms of disease arouse the suspicion of a localised affection of the brain; and for this reason the acute abscesses belonging to this category in the great majority of cases have not been positively diagnosticated.

The latency of the symptoms may be due, therefore, to the occurrence of the abscess in particular situations, or to the brain being able to endure up to a certain point an amount of pressure, when slowly and gradually applied, which, when suddenly received, as in the case of hæmorrhage or bone depression, it cannot tolerate. It seems to be analogous to what occurs in the spinal cord in cases of vertebral caries, and spinal fracture or diastasis. In the former the cord becomes, if I might so express it, acclimatised to the pressure it sustains, consequent on the great, and at times grotesque, alterations in the shape of the column, resulting from caries of the bodies of the vertebræ. In the case of fracture or displacement, however, even when the pressure on the cord is slight, but suddenly produced, the symptoms of paralysis are promptly and distinctly manifested.

From the foregoing observations and cases which I have adduced, the following propositions may, I think, be stated:—

1. That after the primary symptoms of cerebral traumatism have subsided there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formations whatever.

2. That their appearance is, as a rule, sudden, and if uninterfered with they run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition.

4. That this latter fact will probably aid in differentiating

^a Von Ziemssen's Cyclop., Vol. XII.

^b British Med. Journal, 1879.

traumatic cerebral abscess from meningeal or encephalic inflammation.

5. That both as regards colour and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilm's case, published by Rose, of Berlin, they may become transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That, having regard to the great mortality of cases of cerebral abscess when uninterfered with—viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*.

8. That, in the case when the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation.

11. That drainage is desirable in the after-treatment of such cases.

12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.

ART. XV.—*Anæsthetics*. By GEORGE M. FOY, F.R.C.S.I.;
Surgeon to the Whitworth Hospital, Drumcondra.

"Oportet autem neque recentiores viros in his fraudare, quæ vel reppererunt, vel recte secuti sunt; et tamen ea, quæ apud antiquiores aliquos posita sunt, auctoribus subreddere."

CELSUS—*De Medicinâ*.

MEDICAL historians have much difficulty in accounting for the disuse of anæsthetics at a time when medicine was making such marked progress, as it did under Cheselden, Smellie, and Sydenham. Nor do I find any mention of their use in the works of Thomas Vicary, who might fairly be supposed to know all the principal therapeutic agents of his day.

To-day we can hardly imagine why the preparation of anæsthetics was neglected, and it is still more strange, that surgeons of the repute of Paré and Wiseman are not credited with their use. An

explanation—but one not wholly satisfactory*—may be found in the fact that anæsthesia was produced by “stroking” and the inunction of ointments, with which were associated charms and incantations, which latter were little calculated to receive favourable acceptance from men who sought to establish medical practice on a scientific basis. Its association with quackery discredited it.

Greatrakes,^b the celebrated Irish “Stroker,” was brought to England to treat Lady Conway, of Ragley, in Warwickshire, in 1661. He obtained notoriety for his supposed power as an anæsthetist, and was, in consequence, invited by the Earl of Arlington, at Charles II.’s command, to give an exhibition of his powers before that monarch at Whitehall. Greatrakes undertook the journey to England without expectation of office or reward; and after that he had been at the palace of Whitehall, where it does not appear he attracted much attention, he took up his abode in Lincoln’s Inn Fields, “where incredible numbers of all ranks and sexes flocked to him, expecting the restoration of their health.”

Mesmerism, as recorded by Mr. James Braid,^c has proved in many cases in India, and since Braid’s time in France, a successful anæsthetic. It, however, has the tendency to produce hysterical affections, and some instances are on record of temporary, and even permanent, insanity following its use; therefore its application, save in rare cases, is inadvisable.

A somewhat similar process appears to have been known to the early Greek physicians, and is thus referred to in the Greek Anthology:—“Touching them with his hands he (the physician) quickly makes them whole.”

A somewhat similar process was used from the earliest ages for depriving persons of consciousness. Merlin,^d the magician, is credited by tradition with thus rendering insensible the “Knight of the Fountain.”

Pepys,^e in his letter to Lord Reay, makes mention of some of the superstitious practices to which the attempt to produce unconsciousness had degenerated in his time.

* Sir James Young Simpson thinks the anæsthetics of the ancients were so uncertain in their effects that they had to be discontinued, and quotes Aretæus in support of his theory; but I can find nothing in the Sydenham Society’s edition of the Cappadocian’s works to warrant the conclusion.

^b *Early Irish Mesmerists*, by R. R. Madden, M.D., M.R.I.A.

^c *Hypnotism*, by Mr. James Braid, M.R.C.S.

^d *The Book of Merlin*, Cap. XIX.

^e *Pepys to the Lord Reay*, Nov. 21, 1699.

From the eleventh to the seventeenth centuries anæsthesia was produced principally by internal medication and by external application of drugs, though inhalation was not unknown. Indeed, the curative effects of the inhalation of the volatile principle of drugs has been handed down by tradition from pre-historic times: Aphrodite, to assuage her grief for the death of Adonis, threw herself on a bed of lettuce.

Pliny^a refers to the effect of the odour of medicinal plants, and particularly to the anæsthetic effect of mandragora. "It has the power of causing sleep in those who take it." The dose is half a wineglassful. "It is taken against serpents, and before cuttings and puncturings, lest they be felt. For these purposes it is sufficient for some persons to have sought sleep from the smell."

The ingredients of Helen's nepenthe are unknown—many therapeutists consider it contained mandragora, and others,^b as James Ayrton, of Paris, believe the drug was opium. Its story, as told in the *Odyssey*, is:—"Immediately she (Helen) dropped into the wine, of which they drank, a drug—an antidote to grief and rage, inducing oblivion to all ills; he who drinks of this mingled cup sheds not a tear the live-long day, were death to seize his venerated sire, or her who gave him birth, or were the bloody sword buried in the bosom of his brother, or greatly-loved sister, no tear would even then bedew his cheeks."

Dioscorides ascribed narcotic properties to the smell of mandragora apples, and gives directions for making a decoction in wine of the root, thus—"And some making decoctions in wine of the roots to a third, this being strained is put past. Using one wineglassful in the case of the sleepless and those suffering excessive pain, and in the case of those on whom they wish to produce anæsthesia when cut or burnt."^c Showing clearly that the drug was known to possess anæsthetic properties, and occupied a place in the therapeutics of the day.

Dioscorides fully recognised the difference between its hypnotic and its anæsthetic effects. Of the former we are told by him, in the same section, "Eating which (mandragora roots) shepherds are made sleepy." Of the latter, he says:—"Three wineglassful of it (a fluid preparation resembling the wine, in being prepared from the roots) are given to those who are about to be cut or

^a Pliny, Lib. xxxv., cap. 94.

^b Paris. *Pharmacologia*. Eighth Edition. 1833.

^c *De Med. Mat. B. IV.*, s. 76.

burnt, as mentioned before, for they don't feel the pain through being lethargically affected," and again he says, "Physicians use this (and other preparations of it), too, when they are about to cut or burn."

Indeed, the soporific and anæsthetic effects of mandragora were known both to lay and medical writers, and their references to its action place its anæsthetic properties beyond doubt.

Thus Lucian, speaking of the "Isle of Dreams," says—"In a circle around it stands a wood, and the trees in it are tall poppies and mandrakes, and on them a considerable number of bats."^a

In his "Demosthenis Encomium," 36 :—"But he (Demosthenes) rouses his fellow-citizens unwilling, as if put to sleep by mandragora, employing his outspokenness as a sort of cutting and cautery of their apathy."

In his "Adversus Indoctum," 23 :—"But do you think he has been so dosed with mandragora as to hear those things, and not to know?"

In his "Timon," 2, we find the phrase, "You sleep as if through mandragora."

Galen^b makes a short reference to its power to paralyse sensation and motion.

The schools both of the Eastern and Western Califates were familiar with mandragora, and made use of its anæsthetic properties. Avicenna lays down special directions for its use, both as a hypnotic and anæsthetic, and for the treatment of those who have taken an overdose of the drug, laying stress on the necessity of keeping them awake. Averrhoes says of its apples that they are soporific. The later writers—Paulus and Aëtius, according to Dr. Adams, "borrow almost word for word from Galen," on the therapeutics of the herb.

Aëtius,^c according to Dr. Silvester, says :—"Those who drink an infusion of the root fall into a deep and long-continued sleep, or stupor; danger was present when the patient kept constantly drawing in the air, through his mouth, gasping for breath; and if help was not soon afforded he died convulsed."

Paulus Ægineta^d gives the following extract from Dioscorides :—

^a Lucian, Ver. Hist. 11, 33.

^b Galen, Lib. VII., p. 207.

^c Anæsthetics, being a paper read before the South London Medical Society. Reported in the Medical Gazette, Vol. VI.

^d Paulus Ægineta, Syd. Soc. Ed. B. V. and VII.

"Its apples are narcotic when smelled to, and also their juice; that if persisted in, they will deprive the person of his speech." He mentions mandrake as an ingredient in anodyne collyria, and pessaries, and says that in an enema it induces sleep. He also quotes Isidorus:—"A wine of the bark of the root is given to those about to undergo operation, that being asleep, they may feel no pain."

Serapion says it is administered as an anæsthetic prior to operation.

Celsus^a recommends a pillow of mandragora apples for the production of sleep. "If, however, they continue vigilant, some procure sleep by giving them a decoction of poppies or henbane to drink; others place mandrake apples under the pillow."

In 1787 Dr. Willis, by ordering a pillow of hops for George III., revived this method of treatment.

The drug was sometimes thrown on the fire or mixed with some inflammable substance. Thus, Andrew Borde,^b of Pevensey, in Sussex, after he had "travelled through and round about Christendom, and out of Christendom into some parts of Africa," having obtained his M.D. in Montpellier, and become Physician to Henry VIII. and the author of several works, recommended for toothache "a candell of waxe with henbane seeds, which must be lighted so that the perfume of the candell do enter into the tooth."^c

When, however, the Moslems had introduced into Europe the discovery of the process of distillation, a new epoch commenced both in chemistry and surgery, and the inhalation of the vapours of the still, simple or mixed with narcotic herbs, quickly came into use.

An interesting account of one of the earliest of these anæsthetics is given by Sir Thomas Watson,^d who copies the Italian of Ugone's *Chirurgicus*, of which the following is a translation:—"Among the Tuscan writers of some repute in surgery, Ugone da Lucca, born a little after the middle of the twelfth century, of the noble

^a Celsus. *De Medicinâ*. Lib. III., Cap. XVIII.

^b A reprint (black letter) of Andrew Borde's travels was published in 1814, but no reprint, as far as I can learn, has yet appeared of his medical works. It is to be hoped that the Early English Text Society will undertake the task. Borde was a man of much travel, great reading, and a keen observer of men and customs, and his works would form a fitting supplement to the reprints of Bullein and Vicary, that this admirable Society has recently published.

^c A *Breviarie of Health*, wherein are remedies for all manner of sicknesses and diseases, &c. By Andrew Borde, M.D. London. 1547. 4to.

^d Sir Thomas Watson's *Practice of Medicine*. Fifth Edition. 1871. Vol. I., p. 131.

family of Borgognoni, appears to me of first rank. This Ugone was chief of the school of surgeons that treated wounds with wine, oakum, and ligature, with happy success. He had also some practice in chemistry. From him is derived the process of the sublimation of arsenic, described by Teodorico, his son. The latter describes also to us a certain oil *de lateribus*, chemically prepared by his father, and a most powerful caustic of his, and a soporific which by means of smelling alone put patients to sleep, on occasion of painful operations which they were to suffer."

That about this time anæsthetics were commonly known and largely employed in surgery, is a fair inference from the fact of their being soon afterwards so repeatedly referred to by poets and prose authors.

Du Bartas, Guillaume de Sallaste, whose work is a dull Encyclopædia of his knowledge, writes in 1544 (silver-tongued Silvester's translation)—

"Even as a surgeon, minding off to cut
Some cureless limb, before in use he put
His violent engines on the vicious member,
Bringeth his patient in a senseless slumber,
And griefless then (guided by use and art)
To save the whole cuts off the infected part."—

La Première Semaine, ou la Création.

It is a curious commentary on the work that Sieur G. de S. Bartas died of unskilful surgery four months after the battle of Ivry, where he fought in the ranks of Henry of Navarre. His poem—which was founded on Tasso's, went through thirty editions in less than six years, and is said to have suggested "Paradise Lost" to Milton—is paralleled by Middleton's^a :—

HIP.—"I'll imitate the pities of old surgeons
To this lost limb, who, ere they show their art,
Cast one asleep, then cut the diseased part."—

Women, beware Women, Act 4, scene I.

Earlier than either of these poets is the notice by Boccaccio,^b who in the story of Dioneus, gives the account of the effects of the anæsthetic mixture of Surgeon Mazzeo della Montagna, of Salerno, on Ruggieri da Jeroli :—

"The doctor had a patient who had a bad leg; this, he told the patient's friends, was owing to a decayed bone, which he was

^a Published 1657. Thomas Middleton was born in London about 1570, and died on the 4th of July, 1627.

^b Decamerone, 1352.

obliged to take out to make a cure, otherwise he must either lose his leg or his life; but yet he looked upon it as a very doubtful case. They, therefore, bid him do as he thought proper.

“Now the doctor, supposing that the patient would never be able to endure the pain without a soporific, deferred the operation until the evening; and, in the meantime, ordered a water to be distilled from a certain composition, which, being drunk, would throw a person asleep as long as he judged it necessary in this particular case.”

Of English anæsthetists the most celebrated is William Bullein, born in the Isle of Ely, in the beginning of the reign of Henry VIII. After a sojourn in London, Bullein settled in Durham, where he incurred the displeasure of Sir Thomas Hilton, who hired assassins to kill him; escaping this danger, he afterwards fell into poverty, was thrown into prison, and whilst there wrote many books. Amongst others,* “Bullein’s Bulwark of Defence against all Sick-ness, Soreness, and Wounds that dooe daily assault Mankinde: London—Printed by John Kingston, 1562. folio.”

The principal ingredient in Bullein’s anæsthetic is supposed to have been the juice of mandragora. He thus describes its preparation:—“The juice of a certaine herb, pressed forth, and kept in a close earthen vessell, according to art, bringeth deep sleep, and casteth man into a trance, or deep terrible sleep, until he shall be cut of the stone.”

Shakespeare four times refers to the plant under the name of mandrake, and twice under the name of mandragora, and he is familiar with its soporific effects:—

CLEOPATRA—“Give me to drink mandragora,

That I might sleep out this great gap of time.
My Antony is away.”—

Antony and Cleopatra, Act 1, scene v.

IAGO—“Not poppy nor mandragora,
Nor all the drowy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow’st yesterday.”—

Othello, the Moor of Venice, Act 3, scene iii.

Marlowe refers to the narcotic power of the plant—

BARABAS—“I drank of poppy and cold mandrakes juice,
And being asleep, belike they thought me dead,
And threw me o’er the walls.”—

The Jew of Malta, Act 5, scene i.

* Bullein’s works were published by Stickley in 1722. He died in 1576, and was buried in St. Giles, Cripplegate.

Mandragora is still occasionally referred to by poets—

“Have the pigmies made you drunken
Bathing in mandragora!”

Mrs. BROWNING—*Dead Pan*, ii.

Jacques Yoer of Poitou, remarks, in his “Printemps”—“And if I am so delighted (pardon me if I cannot lie) that, like a patient sent to sleep with mandragora, for the purpose of cutting off a limb, I do not feel my disease.”

According to Thligarat Badē, a Persian work, and other authorities cited by Castell, and to be found in Lee's Hebrew Lexicon, Mandragora, when taken inwardly, renders one insensible to the pain of even cutting off a limb.

The herb has been used as an anæsthetic to avoid the pains of labour, and Dr. Silvester * suggests that it was with this object in view that Rachel begged the mandrake from Reuben.

Cannabis indica, according to the manuscript laid before the French Academy of Medicine by M. Julien, appears to have been used as an anæsthetic at an even more remote period of history than mandragora.

This manuscript, which is called “Koukin-i-ting,” contains the following passage—“Hou-tho gave to the patient a preparation of hemp (ma-yo), and at the end of some instants he became as insensible as if he had been drunk, or deprived of life,” and further remarks that the patient “found himself recovered, without having felt the slightest pain during the operation.”

From passages in Herodotus we gather that the Greeks were not unacquainted with the intoxicating and hypnotic effects of the plant. He refers to its employment by the Scythians and the Massagetæ in two passages, and his statement has been verified by O'Shaughnessy, of Limerick, whose researches into the properties of Indian drugs are of world-wide repute. Other drugs were also employed. Guillaume Bouchet's work, entitled “*Les Sérées*,” published in 1544, is quoted by Simpson, from whom the following extracts are taken—“Others have written that if you take some marble from Grand Cairo, called by the antients memphitis, reduce it to powder, and apply it as a liniment with vinegar, and lubricate with it the part to be cut off or cauterised, the patient will not feel much pain or inconvenience.” Cardow says that a person “anointed with opium, celandine, saffron, and the marrow and fat of a man, with oil of lizards, or if he drinks wine in which

* *Medical Gazette*, Vol. VI.

the seeds of *Portulaca marina* has been steeped for a week, that it will prevent him feeling any pain."

The ancients were acquainted with the advantages obtained by combining drugs. Joannes Baptista Porta, in his "*Natural Magic*," copies from Dioscorides the method of preparing a sleeping apple "with opium, mandragora, juice of the water hemlock, seeds of hyoscyamus, and to these musk is added to impart an agreeable odour, collected into a large mass as large as one can hold in his fist;" this he adds "when repeatedly smelt, softens down and binds the eyes in sleep." Subsequently he states that "it is possible to extract from several soporific plants a quintessence, which is to be shut up in well-covered leaden vessels, lest the drug should evaporate. When it is to be used, the lid is to be removed and the medicament held to the nostrils, when its vapour will be drawn in by the breath and attack the citadel of the senses, so that the patient will be sunk in the deepest sleep, not to be shook off without much labour. After sleep no headache remains, nor any suspicion of art. Such things are clear to a wise physician; to a wicked one obscure."*

And according to Teodorico, Ugone's son, Bishop of Bitonto, and afterwards of Cervia, the somniferous sponge of Ugone da Lucca was prepared as follows:—

"Take of opium, of the juice of the unripe mulberry, of hyoscyamus, of the juice of hemlock, of the leaves of the mandragora, of the juice of the wood ivy, of the juice of the forest mulberry, of the seeds of lettuce, of the seeds of the dock which has large round apples, and of the water-hemlock—each an ounce; mix all these in a brazen vessel, and then place in it a new sponge; let the whole boil, as long as the sun lasts on the dog-days, until the sponge consumes it all, and has it boiled away in it. . . . As oft as there shall be need of it, place this sponge in hot water for an hour, and let it be applied to the nostrils of him who is to be operated on, until he has fallen asleep, and so let the surgery be performed. This being finished, in order to awaken him, apply another sponge, dipped in vinegar, frequently to the nose, or throw the juice of the root of fenugreek into the nostrils; shortly he awakens."

M. Chumappe (1534) refers to the use of these somniferous compounds being used in his day, and Ambroise Paré refers to them as having been "formerly used" by surgeons. Boerhaave used opium as an anæsthetic, both by inhalation of its vapour and also given as a powder.

* *Natural Magic*, Lib. III., 1579.

In Marherr's *Prælectiones** there is an account of the anæsthetic effect of the odour of opium, and also a good description of "*Anaesthesia*."

In Baron Van Swieten's Commentaries upon the Aphorisms of Boerhaave, the prescription for his anæsthetic powder is given with Aphorism cccclxix., and is as follows:—

Oil of cinnamon	...	...	Two drops.
Oil of Cloves	...	...	One drop.
Citron peel	...	...	Two grains.
Sugar	...	...	Two drachms.

Mix and add red coral, prepared, one drachm; pure opium, two grains; mix for two doses, one of which is to be taken one hour before the operation, and the other one quarter of an hour before it, if the patient has not slept.

The drugs were sometimes rubbed up with oils to form liniments, which were rubbed over the body.

Dr. Silvester, in the *Medical Times and Gazette*, Vol. XXXVI., p. 504, Nov. 14th, 1857, quotes from the "Living Library," by R. Camerarius, A.D. 1625, done into English by J. Mole, Ch. XIII.—"Shee," says the venerable author, "rubs over all her bodie with a certaine oyntment, which we saw thorow the chinks of the doore. The operation of the soporiferous juyces, whereof this oyntment was compounded, made her fall to the ground, and brought her into a deep sleep. Upon this we open the doore, and some of us begin to strike her and knock her well-favouredly, but she was so soundly asleepe that to strike her bodie and a stone it was all one." To which he appends a translation from the works of an alchymist for preparing a hypnotic tincture:—"The aforesaid drugs," says he, "or as many of them as possible, being converted into an essence, this is to be shut up in leaden vessels, most accurately closed, lest the subtile aura should escape, for in that case the virtues of the medicine would vanish away. At the moment of using, the lid being opened, the vessel must be brought immediately under the nostrils of the sleeping person, and he will draw in by breathing the most subtile strength of the vapour, and thereby his senses will be locked up as it were in a citadel, so that he will be buried in a most profound sleep from which it will be impossible to awaken him."

This admixture of vegetable products with distilled liquors

* *Prælectiones in Hermanni Boerhaave Institutiones Medicas cum præfatione Crantzii* : Philip Ambros Marherr Lovanii, Typis Academicis, MDCCLXXVIII.

may explain the conium and ether preparation of Dr. Richard Pearson :^a—"The vapour of vitriolic ether (whether pure or impregnated with cicuta) drawn into the lungs three or four times a day, has been found serviceable in cases of catarrh, phthisis, pulmonalis, whooping-cough, and croup. At each inhalation two or three teaspoonfuls of ether are used."^b

This was evidently the guide to Dr. Woolcombe, of Plymouth, whose case is thus told by Sir Thomas Watson :^c—"A former patient of mine told me this history of herself—She had been sorely tried, in her earlier years, with paroxysms of urgent dyspnœa, frequently recurring, and her life was thought to be in danger. After fruitless trials of various other remedies, the following method was adopted, with the happiest result (under the advice of a physician of high promise, who died young, the late Dr. Woolcombe, of Plymouth) :—About two teaspoonfuls of sulphuric ether were poured into a saucer, which was placed on her lap, and over which she breathed, as she sat gasping in bed, with a shawl thrown over her head to prevent the escape of the vapour. Very soon a delightful sensation of tranquillity ensued; 'she felt' (I quote her own words) 'as if going to heaven in the heavenly way,' and presently she sank back unconscious. As soon as this happened, her husband (the late distinguished Admiral of the Fleet, Sir T. Byam Martin), by whom the process was managed, withdrew the shawl, and in a short time Lady Martin recovered, breathing calmly. This mode of quieting attacks of asthma was begun in 1806. . . . Lady Martin survived the prediction of her early death for forty-four years."

To Faraday, however, may be credited the recognition of the value of ether as a surgical remedy; in 1818 he showed that the vapour of sulphuric ether, when inhaled, produced anæsthetic effects similar to those produced by nitrous oxide gas.

Its discovery is believed to be due to the Arabian chemist, Djafar

^a A Practical Synopsis of the *Materia Alimentaria* and *Materia Medica*. A new edition, comprising the latest Improvements in the London, Edinburgh, and Dublin Pharmacopœias. By Richard Pearson, M.D. London. 1808.

^b In 1758 Dr. Michael Morris protested against vegetable products being added to the still during the distillation of ether (see *Medical Observations and Enquiries*, by a Society of Physicians in London, Vol. II.). London: Printed for William Johnson, in Ludgate-street, MDCCCLXIV.

^c Lectures on the Principles and Practice of Physic, delivered at King's College, London. By Sir Thomas Watson, Bart., M.D., F.R.S. Fifth Edition. London: Longmans, Green, & Co. 1871.

Yeber, and the method of its manufacture to Dr. Michael Morris, who both explained its method of preparation and advocated its use as a medicinal agent both internally and as an external application. In his letter, read before a Society of Physicians in London, on the 18th of December, 1758, may be found the first hint of its use by inhalation.*

Immediately after Priestley's brilliant discovery of oxygen in 1774, the profession sought in the newly-discovered gas, which came to be designated "vital air," a panacea; its exhilarating effects were manifest, and in cases of cardiac asthenia its benefits were marked; amongst the first to utilise the remedy were Dublin physicians, and on the 7th of July, 1817, Dr. R. Read read a paper before the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland, "On the Use of Oxygen Gas in Angina Pectoris."^b

"The following is the case of a gentleman, aged sixty-six, . . . he suffers from violent pain across the chest, extending from thence down the arms, sometimes even as far as the fingers. . . .

"From the circumstances antecedent, and during the paroxysms, I was now led to propose to Dr. Harvey and Mr. Macklin, that our patient should inhale a quantity of oxygen gas immediately on the threatening or approach of the attack.

"On the 5th of July in the evening . . . I made him inhale a quart of the gas."

The transition from the use of oxygen gas to nitrous oxide was slight, and in 1799 Mr. Davy (afterwards Sir Humphrey), then of Bristol, relieved the pain caused by a wisdom tooth cutting the gum with the inhalation of nitrous oxide gas. And the following year he published the following statement:—"As nitrous oxide in its extensive operation seems capable of destroying physical pain, it may probably be used with advantage in surgical operations in which no great effusion of blood takes place." The anæsthetic, however, remained unnoticed until Mr. Horace Wells, of Hartford, Connecticut, tried its effects in extraction of teeth, and, after some consecutive failures, discontinued its use.

* Med. Obs. and Enq. By a Society of Physicians in London. Vol. II., p. 176, MDCCLXIV. In this volume may also be found Mr. Lambert's paper on the value of acupressure in arresting arterial bleeding, read by William Hunter.

^b Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland. Vol. i. Dublin: Printed at the Hibernia Press Office, for John Cuming, 16, Lower Ormond-quay; and Longman, Hurst, Rees, Orme, and Browne, London. 1817.

Four years afterwards Mr. Bigelow "ablated" the breast of a patient who was under its influence.^a

The success of the remedy in dentistry is fairly due to the untiring energy of Dr. G. Q. Cotton, an American dentist, who, in 1867, proceeded to Paris and, supported by the opinions of Evans and Préterre, succeeded in getting it a trial at the hands of the Parisian dentists.

It was Cotton's apparatus with which Dr. Evans gave his demonstrations at the Dental Hospital (March 31st, 1868), and, in consequence, led the Odontological Society of Great Britain to consider the subject.^b

To whom we are indebted for the commercial application of the liquefaction of nitrous oxide is difficult to determine; at any rate, it is known that Dr. Evans brought nitrous oxide in a liquid state into England.

To the general surgeon nitrous oxide has not commended itself, and the majority of surgeons who perform surgical operations use either chloroform or ether.

Of many of the anæsthetics used during the Middle Ages, the formulæ have not been handed down. Albertus Magnus makes mention of an animal product of which he says: "Any person smelling it falls down as if dead and are insensible to pain," and similar effects are by him ascribed to the "bieith," or "nepta," a vegetable product.^c "In 'Le Procès Criminel,' by Claude Lebrun de la Rochette, we have the following remark as to the employment of such drugs by criminals about to suffer torture—'As to their artifices not to feel the pain of the rack, I saw in the first year of my reception at the bar of Beaujolais, which was in the year 1588, that one of the four thieves, who were prisoners—the chief named Grand François—a man of gigantic stature, was put to the rack, fell asleep, and the toes were torn from both his feet, without his manifesting any signs of pain. One of his companions observed that he had eaten soap, which stupified the nerves. The remedy to the artifice is to give wine, which being brought and drunk, he then said he was dead, and without any further torture freely confessed an infinite number of murders and robberies, to atone for which he and his companions were broken in the wheel by

^a Boston Medical Journal. Vol. I., p. 17.

^b A Manual of Nitrous Oxide Anæsthesia. By J. Fredk. W. Silk, M.D. (Lond.), &c. London: J. and A. Churchill. 1888.

^c De Mirabilis Mundia.

sentence of Master Thomassot Provost, of the Mareschals in Beaujolais.' ”*

The Shakesperian references to the anæsthetic properties of plants are familiar to almost all professional men :—

FRIAR LAURENCE—“ Within the infant rind of this small flower

Poison hath residence and medicine power ;

For this, being sweet, with that bait cheers each part,

Being tasted, slays all senses with the heart.”—

Romeo and Juliet, Act 2, scene iii.

And a little further on he says—

“ Take thou this phial, being then in bed,

And this distilled liquor drink thou off ;

When presently through all thy veins shall run

A cold and drowsy humour ; for no pulse

Shall keep his native progress, but surcease.

No warmth, no breath, shall testify thou livest ;

The roses in thy lips and cheeks shall fade

To paly ashen ; thy eye windows fall,

Like Death, when he shuts up the day of life ;

Each part, deprived of supple government,

Shall stiff, and stark, and cold, appear like death ;

And in the borrow'd likeness of shrunk death

Thou shalt continue two-and-forty hours,

And then awake as from a pleasant sleep.”

Romeo and Juliet, Act 4, scene iii.

In *Cymbeline*, the following lines occur—

“ Those she has

Will stupify and dull the sense awhile,

Which first, perchance, she'll prove on cats and dogs ;

Then afterwards up higher ; but there is

No danger in what show of death it makes

More than the locking up the spirits a time

To be more fresh, reviving.”—

Cymbeline, Act 1, scene vi.

The fact that the older surgeons were able to fix the length of time which the anæsthesia was to last is of much interest, and their power is well shown in the length of time, forty-two hours, fixed by Friar Laurence for the anæsthetic effect of the draught to continue on Juliet. Modern anæsthesia has not attained to such power and precision.

One of the last cases in which anæsthesia was produced by the internal administration of a drug is the remarkable one in which the pupil of Jean Louis Petit Weiss operated on Augustus, Elector of Saxony and King of Poland, at a time when Saxony

* Simpson's History of Anæsthetics.

was one of the leading States of Germany, and Poland was the champion of Europe against the Turk.*

The foot was amputated successfully under the anæsthetic, and Augustus declared the operation was painless. It is quite possible—indeed it is probable—that the draught was prepared by one of the Slave population of Poland; for although Petit's reputation occasioned his being summoned to attend not only the French monarch but also the kings of Spain and Poland, yet there is no mention of his ever having anæsthetised a patient prior to operation, although almost every detail of his life is known to us: how he first commenced the study of anatomy, at seven years of age, became, at twelve, superintendent of Litré's anatomy room, and finally attained a European reputation.

(*To be continued.*)

ART. XVI.—*Three Cases of Ovariectomy.*^b By JOHN W. BYERS, M.A., M.D.; Physician for Diseases of Women to the Royal Hospital, Belfast; Physician to the Belfast Hospital for Sick Children; Fellow of the Obstetrical Society of London, and of the British Gynæcological Society; Vice-President Ulster Medical Society.

CASE I.—S. H., aged twenty-eight years, admitted to the Royal Hospital, Belfast, 21st December, 1887.

Previous History.—Was quite well until July, when she noticed a swelling in the left side of her "stomach," which has gradually become larger until the period of her admission to hospital. Has had no attacks of pain, but complains of her increased size, and a feeling of oppression in her chest, caused, she thinks, by the pressure of the swelling. Health in other respects good. Catamenia first at thirteen years; lasts five days, no pain; interval usually between three and four weeks. "Ill" two weeks before admission; bowels regular; appetite good.

Condition on Admission.—Abdomen distended with a tumour, which occupies the supra-pubic, umbilical, left iliac, and a portion of the right iliac regions. This swelling is dull on percussion, is partly fluid and partly solid, and is not altered in any way when patient changes her position. Flanks are resonant on percussion. Per vaginam, uterus normal in size, but pushed forwards by an elastic swelling felt in Douglas's pouch. No evidence of any other disease in abdomen or chest. On January 18th, four

* Skizzen, or Sketches by A. G. Meissner, published at Carlsruhe in 1872, and translated by Dr. Silvester.

^b Read before the Ulster Medical Society.

days after the "period," she took ten grains of colocynth and hyoscyamus pill, and on the next night she had an enema and a warm bath.

Operation.—Jan. 20th, 1888. At six o'clock, a.m., she had a cup of beef-tea. The abdomen was covered with a towel wrung out of 1–20 carbolic lotion, and at ten o'clock a catheter was used, and the operation was begun, Professor Sinclair, the House-Surgeon, and five students being present. A two-inch incision was made, and the tissues being divided right down to the peritoneum, it was carefully opened and the tumour exposed. It was tapped, but only a small quantity of fluid came away, a second cyst was opened, and several pints of fluid escaped through the canula. Tumour was then withdrawn, and the pedicle having been tied with Tait's knot and divided, several vessels in it were ligatured, and the cut surface having been covered with corrosive collodion (4 per cent.), it was returned into the pelvis. There were no adhesions, and Douglas's pouch having been sponged, the edges of the abdominal wound were brought together with six silver sutures. The wound was dressed with iodoform gauze and absorbent wool, and the abdomen was covered with strapping and an ordinary binder. The patient made an uninterrupted recovery, except that on the evening of the third day she complained of abdominal pain, and was sick, and her temperature ran up to 100° and her pulse to 110. A saline purge was administered, but on the next morning she was better with the onset of "menstruation." On the seventh day three ounces of olive oil were injected into the rectum, and afterwards an enema of soap and water, which caused the bowels to act freely, and on the eighth day the stitches were taken out, and the patient was removed into the ordinary ward in another week.

CASE II.—R. H., aged twenty-four, single, noticed, five months before admission into the Royal Hospital, a swelling in her abdomen. On examination, the physical signs of a partly fluid and partly solid tumour within the abdomen were present; per vaginam, a portion of the tumour felt in front of the uterus. No evidence of any visceral disease. The operation was done on Feb. 8th, 1888, four days after she had been "unwell." Incision three inches. Two cysts were emptied by means of the trocar and canula, and then the tumour was withdrawn, and the pedicle tied with Tait's knot. On returning it within the abdomen some blood welled up from Douglas's pouch, and on re-examining the pedicle the ligature was seen to have slipped. A second one was applied, and all bleeding ceased. There were no adhesions, and after careful sponging, the wound was brought together in the same way and dressed in the same manner as in Case I. Patient made a rapid recovery.

CASE III.—S. F., aged twenty-three, single, was admitted into the Royal Hospital towards the end of October, 1887, with the following

history :—While staying in the country the previous September, she had been suddenly seized with severe pain and shivering while “unwell,” and then for the first time she noticed a swelling in the lower part of the abdomen, which she thought had been since that time getting larger. On admission she suffered from diarrhoea, occasional attacks of vomiting, and nightly elevations of temperature. A small, obscure, elastic tumour was felt in the supra-pubic region, and extending towards the right side. After being in hospital for two weeks, her condition began to improve ; the vomiting became much less frequent, the diarrhoea ceased, and the temperature fell to normal. However, on November 16th, her temperature ran up to 100° from normal, and on the next day, when I examined her, with Professor Cuming (under whose charge she had been), I found the abdomen distended and painful on pressure ; and, occupying the umbilical and part of the hypogastric regions, there was an elastic tumour, partly resonant in front. A vaginal examination showed that the uterus was normal in size, but pushed forwards and high up. Behind this organ there could be felt an elastic, semi-fluctuating tumour, apparently continuous with the one felt through the abdominal walls. It was decided to open the abdomen, and this I did on November 20th, Professor Cuming, Mr. Fagan, Dr. Wheeler, and Professor Sinclair being present.

A three-inch incision was made, and on dividing the peritoneum, which was acutely inflamed, the omentum presented. It was with difficulty pushed upwards, and then a tumour, to which it was in part adherent, was brought into view. This tumour was of a dull white colour, and was clear on percussion. A fine trocar was passed into the tumour, when a foetid stinking gas escaped, and some pus appeared. After this, a larger trocar was used, and then the cyst was found to be adherent on all sides, and especially above where it was crossed by a loop of intestine, from which it was with great difficulty separated. In attempting to break down the adhesions, the walls of the tumour, which were rotten, gave way, and some of the fluid, despite every effort, escaped into the peritoneal cavity. After a time all the tumour was removed, but there was no pedicle. On examining the pelvis, there were detected the remains of a pedicle stump on the left side. The abdomen was then thoroughly flushed out in every part with warm water, until the returning fluid seemed to be pure, the wound was brought together with silver sutures, and a glass drainage tube inserted at the lower part, and arranged with india-rubber cloth and sponge. The patient bore the operation fairly well, but in the evening her pulse ran up to 120°, vomiting and constant sickness began, and continued until she sank on the third day.

I think that the probable explanation of this case is, that there was an ovarian cystoma on the left side, the pedicle of which became twisted, and that then the tumour inflamed and contracted adhesions to the intes-

time; the pedicle subsequently gave way, the cyst suppurated, and general peritonitis occurred.

This case shows one of the risks which every patient incurs who has an ovarian tumour—viz., twisting of the pedicle, with suppuration of the cyst and general peritonitis. The other risks are sudden rupture and hæmorrhage.

2nd. With such risks to a patient, ovariectomy should be advised without delay as soon as the tumour can be diagnosticated.

3rd. Nay, more, given some morbid condition within the abdomen, which is not amenable to ordinary treatment, and which is evidently jeopardising the patient's life, the rule should be to open the abdomen, and act according to what is then found present. The longer the delay in operating, the greater is the risk of adhesions; and the presence of adhesions renders the operation not only more difficult, but more fatal. In giving details of "three hundred additional cases of complete ovariectomy," Mr. Knowsley Thornton states that in 106 of the 300 cases there were no adhesions, and in 18 others the adhesions were only slight; but in the large proportion of 176 cases the adhesions were extensive, and in these all the mortality occurred.

In conclusion, let me draw attention to one or two points:—

Metro-Staxis.—In Case I., on the third evening the pulse and temperature ran up, and I was much relieved to find this was explained by the subsequent onset of menstruation. What is the real cause of this false menstruation, or "metro-staxis," we do not clearly know. It is said to be more common with a short pedicle, with sessile tumours when uterine tissue is apt to be included in the ligature, in the case of double ovariectomy, and when some nerves in the broad ligament are tied along with the pedicle. Its occurrence raises the question—when should one operate?

I think a few days after menstruation is the time generally preferred, but such a brilliant ovariectomist as Mr. Thornton advises as a good time for operating a week to a few days before menstruation, on the ground that the period coming at the usual time, will cause less disturbance of the patient than at an unusual time.

After-treatment.—In all my cases for the first 48 hours nothing was given in the way of food but tepid water, toast-water, barley-water, and nutrient enemata. Ice and milk were avoided, and opium. Nothing is more remarkable in the after-treatment of ovariectomy than the change that has taken place in the use of opiates. Formerly it was a stereotyped practice to give morphia subcutaneously or laudanum by enema in almost every case, but

now, thanks to Mr. Tait's teaching, opium is, as a rule, avoided, unless, perhaps, in two conditions, when the patient is very much excited or in great pain. I remember, when studying under Mr. Jonathan Hutchinson at the London Hospital, that in lecturing on hernia he objected to the use of opium because, as he said, "it masks symptoms of strangulation." After abdominal operations it frequently causes distension of the abdomen, dry tongue and thirst, and hence one dislikes to use it. For thirst I have found the enema of hot-water of great service.

I think it will be admitted by every one present that the great success in modern times of abdominal surgery has been due to the extreme attention that is now paid to minutiae. It is not sufficient for a surgeon to go into the operation room when his patient is ready, and remove an ovarian tumour. He must look after the preparation of his patient, so that she may be in the best possible condition to undergo an operation. He must be careful about the sanitary condition and purity of the room in which he is to operate. He must be most careful as to his own condition as well as that of his assistant and those present at the operation. He should be personally responsible for the preparation of the sponges, ligatures, dressings, and the extreme cleanliness of the instruments.

Brilliant operators may differ as to the value of the spray, or, indeed, as to the necessity of using antiseptics at all in abdominal operations; but I think all will agree in this, that perfect cleanliness and extreme attention to every detail are absolutely essential to anyone who hopes for success as an ovariectomist.

ART. XVII.—*Successful Case of Ovariectomy in a Child Eight Years and Six Months of Age.** By WM. G. MACKENZIE, F.R.C.S. Ed.; Surgeon to Belfast Hospital for Sick Children.

OVARIAN tumours in children being comparatively rare, I venture to give the following notes of a successful case:—

CASE.—M. C., of Templepatrick, Co. Antrim, eight and a half years of age, was admitted into the wards of my friend and colleague, Dr. John M'Caw, on the 15th of September last. She was a delicate child, of slender build, fair complexion, head large, and frontal eminences prominent. I could obtain very little history of the case from the parents further than that about six months ago the child was ailing with a severe

* Read before the Ulster Medical Society,

cold, and at that time the mother noticed that the child's abdomen was large, but little notice was taken of this fact, as the child did not complain of any pain. In September, the swelling having increased considerably, she was brought to the hospital. Dr. M'Caw took the following measurements on admission:—Around the abdomen midway between ensiform cartilage and umbilicus, $24\frac{1}{2}$ inches; at umbilicus, $23\frac{1}{2}$ inches. (On the 10th October, when the child came under my care, the girth of the abdomen had increased more than one inch.

It was evident, after very careful examination, that one had a unilocular cyst—probably a dermoid—with which to deal, and, after consultation with my colleagues, I determined to perform abdominal section.

On the evening of the 12th of October the bowels were well emptied by a dose of castor-oil, and on the morning of the 13th by an enema of hot water. At 8 o'clock a.m. a cup of beef-tea was given; and at 12 o'clock I operated in the presence of Drs. Samuel Browne, J.P., R.N.; J. Walton Browne, Byers, Calwell, Dicky, Fagan, J.P.; Hawthorne, J.P., Dromore; M. B. Mackenzie, Lisburn; M'Caw, and Brice Smith. Dr. M'Caw kindly gave chloroform. Assisted by my colleagues, Mr. Fagan and Dr. Byers, I opened the abdomen by an incision in the median line, midway between the umbilicus and pubes, $2\frac{1}{2}$ inches long. Having exposed the cyst wall and evacuated about two and a half quarts of fluid, I cautiously broke down some slight adhesions to the abdominal wall, and drew out the tumour. I tied the pedicle, which was 2 inches long, by the Staffordshire knot (recommended by that master of abdominal surgery, Mr. Lawson-Tait). No cyst fluid was allowed to enter the abdominal cavity. I closed the wound by three deep silver wire sutures and three superficial silk sutures, and dressed with powdered iodoform, iodoform gauze, and absorbent cotton.

In a child so young and so hysterical the proper nursing was a matter of much concern to me, and I desire to thank Nurse Ferris for her great care in the preparation of the room, and her particularity with regard to instruments and sponges; and as the child the next day after operation became quite unmanageable in the small surgical ward I was obliged to have her bed carried into the small medical ward, and she was there placed under the care of Nurses Buchanan and Hewitt, to whose unwearied attention and intelligent care I am much indebted for the success of the case. The child having first been admitted to the medical ward would not be constrained or coaxed to remain in the surgical ward, but cried incessantly for three hours in the early morning, and when once removed to the medical ward she made an uninterrupted recovery. I did not open the wound for six days, when I found it had healed by first intention.

April.—I have the satisfaction at this date of recording that my little patient is in good health. The tumour was a dermoid of the left ovary.

ART. XVIII.—*Soldiers' Food.*^a By J. HICKMAN, Army Medical Staff.

SECTION I.—SUGGESTIONS FOR ALTERATIONS OR IMPROVEMENTS IN THE EXISTING RATIONS.

CONTINUING the comparison between the soldier's ration and the two diets chosen as standards, it can be seen that the nitrogen is too low by nearly one-fifth, the fat is hardly one-half, the salts are one-fourth too small in quantity, the amount of carbon looks correct, but it is chiefly furnished by the carbohydrates, instead of by the fats. These items will each require a brief notice.

The nitrogen is to be increased one-fifth. This seems simple, theoretically, by adding more albuminates in the form of meat, cheese, peas, beans, or lentils. Now animal nitrogenous matter is the most quickly digested, it appeases the appetite and invigorates the system more thoroughly under exhaustion. Pettenkofer and Voit have shown that the amount of ingestion of nitrogenous matter determines the absorption of oxygen; the greater degree of digestibility involves a corresponding increase in oxidation or vital force. Again animal food renders the blood richer in red corpuscles than vegetable food. The tendency of hard service or tropical heat being towards their diminution, such food seems specially indicated. Meat is a direct stimulant; in those unaccustomed to its use a species of intoxication has ensued after a full meal. It is also conducive to mental vigour. The moderate meat-eater is more energetic than the so-called vegetarian. This point is hardly ceded in Parke's "*Hygiene*." As to its composition the advantages are apparent. It contains a large proportion of albuminoids, fat, and valuable salts (potassium chloride, phosphate and lactate, with iron and others). Its constituents are similiary combined to those of the human tissues; it is easily cooked, and its consumption tends less to the formation of tissue fat.

The conclusion from the above data is that the meat allowance should be increased by $\frac{1}{4}$ lb. daily. For 100,000 men, at 8d. per pound, this would be an increase to the estimates of about £300,000 a year (at 6d. per pound, £250,000), which would hardly be sanctioned by Parliament. Bone constitutes from 20 to 30 per cent.

^a The reader is referred to the July and September numbers of the *Dublin Journal of Medical Science* and to Parke's *Hygiene*. 1887. Pp. 515-519.

of a soldier's ration, on the average, and 8 per cent. is due to tough gristle and fibrous tissues, and after these two are subtracted from the ration the remnant yields only 17 per cent. of total albuminoids and 13 per cent. of useful albuminoids. The loss by cooking is 23–34 per cent., according to the process adopted. In cutting up, 5 per cent. additional is lost. All deductions being made, the soldier does not get more than 4 or 5 ounces of the 12.

Fresh meat should be provided as often as possible. It may be laid down that salted and preserved meats should be looked upon only as varieties in diet, and used rarely. Beef and mutton should be made to alternate. In India beef is issued only one day in the week; at home the direct converse is the rule.

Fish.—A few words about the value of fish as a proteid diet may be suggested. In general, fish is less rich in fat than ordinary butcher's meat, and in many instances it is richer in nitrogenous matter. Of edible fish, constituting wholesome, nutritious, and valuable food, there is almost an infinite variety, and there should be in most places an unlimited supply. An analysis is appended:—

	White Fish.	Red Fish.	Eels.
Nitrogenous matter -	18·1	16·1	9·9
Fat - - - -	2·9	5·5	13·8
Saline - . - -	1·0	1·4	1·3
Water - - - -	78·0	77·0	75·0
	<hr/> 100·0	<hr/> 100·0	<hr/> 100·0

Of course this class of food would accentuate the deficiency of fat, and it is only recommended as a pleasing change, and equal in value to lean meat in albuminoids, but deficient in other respects. The comparatively little resistance fish offer to decomposition, and the danger of eating them if in any way tainted, render them (in spite of their cheapness) unfitted for anything except occasional use in the soldier's dietary.

Peas, Beans, &c.—The leguminosæ are characterised by the presence of a large quantity of nitrogenous matter, representing the casein of animal food, and by the existence of sulphur and phosphorus in combination, and are a good substitute for animal food. Experience, however, shows they are not easy of digestion, liable to occasion flatulent disturbance, and to prove heating and stimulating; and, in a dietetic point of view, they are inferior to the cerealia. Lentils are supposed to possess laxative properties, and to be quickly digested, but it is more or less a mistake to con-

sider they are more wholesome than cereal flours. As a modification in the existing ration, the addition of some ounces a day, carefully cooked, can be recommended. As will be seen in comparative tables, they form a part of the regulation fare of the French soldier. The meal of the dried pea is employed chiefly as an ingredient of soup, when, if well boiled, it becomes an extremely nutritive addition.

Oatmeal.—The use of oatmeal has unfortunately never become popular outside Scotland. It is a substance rich in nitrogenous matter, and an excellent food for soldiers in war-time. As porridge, which consists simply of the meal well boiled, it admits of various nutritive combinations, such as with milk, treacle, butter, &c. It is also a valuable addition to both animal and vegetable broths. Its use in any capacity cannot be urged too strongly.

Cheese.—Cheese, properly made and in good condition is undoubtedly a satisfactory nutriment. It contains a large proportion of nitrogenous matter in a small bulk; it is difficult to digest in quantity and it should be limited to an ounce at any meal. On active service a lump of cheese and a biscuit are perhaps the best articles for a soldier to carry in his haversack in case of an emergency (bacon, rice, coffee, and salt). An ounce daily would represent .335 oz. albuminoids and .243 oz. fats. In a small volume cheese combines a large proportion of proteids and fats, and it should have a permanent place in the ration of the soldier. In Cairo the cheese was very bad, in India the cream cheese is tasteless. The two ounces of cheese issued in Egypt were in lieu of two ounces of meat, and the substitution was not appreciated.

Fats.—The uses of fat in its relation to energy have been enumerated. In digestion the alleviation of hunger in a diet with a proper allowance of fat is due to the fact that fat limits the decomposition of the albuminous particles, and consequently the craving to make good the waste is felt less urgently; fewer albuminates require to be replaced. As the nitrogenous waste is lessened the amount of drink required for its removal is lessened. The consumption of fat is attended by a diminished demand for fluids. Elsasser, in carrying on artificial digestion, found that fat considerably accelerated the digestion of nitrogenous food. It is supposed that the digestive powers of the pancreatic juice and of the bile is due partly to the presence of fat. Colourless blood-corpuscles receive, perhaps, the first impulse of their formation

from the metamorphosis of fat, and thus fat may aid in the genesis of the blood. Enough has been stated to show the importance of hydrocarbons in a scientific dietary. In the ration of the British soldier, and in those of other armies the amount is absurdly small. Besides the proportion of hydrocarbons found in the substances considered in the albuminoids, the addition of at least 2 ounces of fat in the shape of butter, suet, or bacon-fat, should be recognised as the essential factor in the determination of the standard ration. The suet from the rations might be utilised in making pudding for the men. Plum-duff is composed of raisins, currants, flour, and suet, and half a pound can be made for 1d. In any system of extra messing the men would gladly submit to this small tax in return for this excellent supplement to their food. The meat should be dressed so as to retain the juices and to limit the cook's perquisites from the dripping-pan; any such remnant should be preserved for the preparation of other dishes. In the canteen the sale of good cheap butter should be encouraged. The use of oil, so common on the Continent and in India, might be introduced into the army with advantage.*

Carbohydrates.—The quantity of carbohydrates in the shape of vegetables, potatoes, and bread is, perhaps, excessive. If any deduction were contemplated to balance the proposed increase they would best take place in this class. This surplus is questioned by some authorities. The examination of the refuse of the barrack tables will, however, dispel any doubt as to the wilful waste. It would be worthy of trial to distribute collectively the

* Contrary to the behaviour of the albumens in the organism, the extent of fatty metabolism is independent of the ingestion of fat, but is markedly affected by the amount of work performed by the organism and by the maintenance of animal heat. The material effects of albumen and fat in the system are in a certain sense opposed, for the former increases the tissue-waste, and secondarily the oxidation, while fat induces the opposite effects. This action of fat is of special importance, when we have to consider how best to attain an increase of the constituents of the body. With an exclusive supply of albumen, only very small quantities of this substance can ever be retained in the body; for each accession of albumen to the food gives rise to an increase of waste until, after a few days, the balance between income and expenditure is again established. With a simultaneous administration of albumen and fat a less amount of albumen is on this account necessary to meet the material wants of the organism, and if it be present in excess the metabolic processes do not attain the same proportions as with a diet consisting exclusively of albumen, so that a large proportion of the excess remains undecomposed in the body and adds to its weight. The fat stored in the body acts in like manner with the fat contained in the food, since it likewise lessens the waste of tissue and secondarily the oxidation. This is the reason why corpulent individuals frequently continue to gain in bulk, although they are not in the habit of indulging immoderately in food.

amount of bread and other carbohydrates due to each mess, instead of the present individual issue. Those whose digestions are impaired by tropical service, dissipation, or other causes, would leave plenty to fill the empty stomachs of the hungry recruits. Those who attribute tobacco-chewing and beer-drinking in young soldiers to the pangs of hunger could hardly then venture to advance such theories. It is urged, too, that recruits coming from the agricultural districts are accustomed to eat largely of carbohydrates, and that even their stomachs are enlarged from this dietary. In the open country this excess is carried off by the abundance of oxygen contained in the air—very different from that breathed in towns or barracks. The increase of weight produced by a full diet of carbohydrates cannot be called characteristic of health or vigour. On service bread is always issued, and biscuit is only an emergency ration. The use of rice should certainly be extended; the difficulty in the way of its proper cooking could be overcome in a few lessons.

Salts.—As a necessity against the appearance of scurvy the value of salts is apparent, and vinegar was specially recommended. If salads made with oil and vinegar were used, a double benefit would be conferred. The soldier seems to have a national prejudice against such combinations.

Condiments.—The judicious use of condiments in making articles of food agreeable to the taste and appetising requires only mention to advocate their constant employment.

Tobacco should be issued on service. Its use, in moderation, is harmless, and it is almost indispensable to those accustomed to it.

The changes proposed and the reasons for recommending them have been considered. By calculating this value in different constituents from the tables and adding them to Table A. (page 198) the result will give a diet almost identical with the standard ones; the amount of fat will be found sufficient, and the potential energy in foot-tons will fully reach the ideal.

The soldier, like any other animal, is so much the creature of his food—his physical perfections and his moral tone are so dependent on the food he receives, and the uses he is able to make of it in his system—that any attempt to investigate the influence of diet on nutrition and work must of necessity be of general interest.

SECTION II.—WAR RATION.

As regards the determination of a ration in time of war, the question depends on so many conditions that it would be perhaps

presumptuous to suggest an universal one. A collection of them, used in recent wars, and others, have been tabulated, and will form the best guide. The one used in the Nile river column, 1884-85, is the most instructive.

With these data, and the knowledge of the resources of the country supplied by the Intelligence Department, a standard ration can readily be settled on a broad and liberal basis. A great deal of information will be found in Lord Wolseley's "Pocket-book" about the carriage and issue of meat and bread in a campaign.

SECTION III.—RATION IN INDIA.

The subject of the ration in India has not been discussed. The general conclusions that may be urged are:—Less food is required, and should be taken, in tropical climates. Nitrogenous food, both in quality and proportion, should be sparingly used, and the greater part be obtained from the vegetable kingdom. Fat should very sparingly, and starch foods largely, constitute the diet; the latter, being more easily disposed of by combustion, are more suitable in a hot country; fat, on the other hand, being demanded in a cold country because of the large quantity of oxygen its combustion requires. The tendency to put on fat rapidly is evidence of a low state of the organism. The starches are sufficient to preserve the animal heat in the tropics, except when much physical work has to be done, when a proportion of fat is demanded. The proportion of fat contained in vegetable food sufficing, animal fats are scarcely required. In India, where exercise is necessarily limited, the carbohydrates, mild and unstimulating, are the most suitable as a basis of nutrition.

SECTION IV.—TIMES OF MEALS.

At present the usual hours for soldiers' meals are:—breakfast, 8 a.m.; dinner, 1 p.m.; tea, 4 30 or 5 p.m. The best course will be to consider each in detail.

The early morning parades are generally about 6 or 6 30, or in summer may be at 5—that is, men coming in late at night are turned out to parade without having had anything to eat. Even considered from the point of view of discipline this practice is to be deprecated. Men having partaken of some nourishment, anyway a cup of coffee, are in a better humour with themselves and their superiors, and insubordination, absence, and lateness at parades will be found to sensibly diminish. Many go so far as to advocate

a regular meal at the time of rising, but it is generally accepted that light refreshment is sufficient to maintain the equilibrium till the breakfast time. Hot coffee, with plenty of milk may be advised; it is a stimulant to the system, invigorating without depressing.

In the Aldershot cavalry barracks the men can get a good cup of coffee and a bun for a penny, and a cup of cocoa and milk, or a tumbler of milk and a biscuit could be sold for less probably. A pint of cocoa or chocolate is at present issued to the blue jackets or troopers, morning and evening, and is much appreciated. The cooking to provide a full meal could hardly be managed. Two good meals are sufficient in the day, and if a hearty breakfast were taken too soon the interval between it and the other meal would be too great. The work intervening is only an hour's parade, after which breakfast can be taken with leisure and appetite. The morning parade work should not be excessive; no fatiguing duties should be undertaken, as much unaccustomed exercise is likely to be followed by langour through the day.

In cold or rainy weather this food, before leaving the barrack-room, should be specially insisted on. In every campaign, before starting on the day's work or march, the rules lay down that soup, Erbswurst, or coffee, is to be issued. In India early rising is universal, and the habit is generally adopted. On the march the coffee-shop is an institution, and the men avail themselves eagerly of it. It is the universal opinion of medical men abroad that in places where malarious fevers are prevalent the susceptibility to their influence is much increased by starting for the day without food.

This early issue of refreshment should not be dependent on the caprice or wish of the regimental authorities, or on the pocket of the soldier. It should be embodied in the Queen's Regulations that no morning work should be commenced without an attempt to restore the waste of the body during fasting and sleep.

Breakfast wants only a few words. No alteration in the hour can be suggested. According to Dr. Edward Smith the daily distribution of food, supposing a physiological diet of 4,300 grains of carbon with 200 grains of nitrogen be taken, should be—

		Carbon	Nitrogen
For breakfast	- -	1,500	70
For dinner	- - -	1,800	90
For supper	- - -	1,000	40
		<hr/> 4,300	<hr/> 200

or the total daily food should be distributed among them by allotting three parts to the first, four to the second, and two to the third. When dinner is eaten late, $\frac{4}{5}$ ths of the supply may be eaten then, and half that quantity at luncheon.

This division would assume that the system requires meat twice a day to cover the wear and tear and to supply nitrogen, and to produce the highest state of health in the adult. In the recruit, whose muscles are developing, and whose actual and reserved energy it is proposed to increase, the bodily waste is far more active, and he requires nitrogenous food twice a day, at breakfast and at midday dinner, and on no account in the after-part of the day. In nitrogenous food are comprised fish, bacon, sausage, eggs, &c., with any of which breakfast can be varied.

It need hardly be said that breakfast should be a substantial meal; the digestion early in the day is active, and the work of the day is to follow. Cocoa, milk, hominy, or oatmeal porridge, are amongst the best articles. The unsuccessful efforts to introduce into household use "wholemeal" (not simply bran) bread, might be renewed and enforced in soldiers' diet.

Now, as to the time for dinner. It is generally assumed that an ordinary meal is, in a healthy man, completely digested and passed out of the stomach in about four hours. Then, if we add a period of two hours for rest to the stomach, food would appear to be required at intervals of six hours. This is what experience teaches, and what is practically adopted. Sleep means a great diminution of bodily activity, and this greater interval can be accounted for. Breakfast being taken at 8, the midday meal should be ready at about 1, the time chosen by workingmen and the middle class generally, in schools, prisons, and all institutions.

It is laid down that the chief meal of the day, the full meal (by whatever name it is called) should be taken at any hour when active occupation, bodily and mental, can be suspended for from one hour and a half to two hours—in other words, it is not found conducive to health to take a full meal in the midst of the day's work. If soldiers had their dinners late, after they had finished their duties, they would probably remain more in barracks. The question of late dinners for shop-people and clerks has been elaborately argued by Dr. Dobell in a circular addressed to employers of labour, 1852. In the case of a soldier the suggestion is worthy of consideration. Bread and cheese at midday is the usual substitute proposed, and the regular dinner postponed till 4 or 5. This

change would be universally condemned. An early dinner is a recognised essential of working life. Unless further restrictions were made the men would not wait so late in barracks, especially on Sundays and half holidays; or after a good morning's work, such as route march or field day, they would anticipate the postponed meal by beer or by a supply of food from the coffee-shop. The present hour at least ensures that every man has the opportunity of partaking of at least one excellent meal in the day. Any change would produce discontent, and the idea may be dismissed as a purely theoretical one.

Except fatigues, punishment drills, or guard occurring at intervals, the duty of the foot soldier after dinner consists of only an hour's parade, and old soldiers are even exempt from this. In the mounted branches stables have to be attended, and many other duties may present themselves. If the present agitation for the "square" meal in the afternoon can be justified by the proportion of afternoon work the mounted corps will surely have a primary claim to this indulgence. The thing to be remembered is to allow time for rest before and after the meal, and the afternoon drill should be delayed to further this object.

To recapitulate: to those whose physical powers have been taxed the short perfect rest before is to be recommended; and when the dinner is finished at least an hour should be given to physical tranquillity. After this hour gastric digestion will be established, and the blood and nervous energy employed in the process will no longer be required, and can be devoted to another form of animal force. In practice, no doubt work immediately after a meal interferes with digestion, but this applies only to hard work, and most of the working classes can secure a quiet hour for the enjoyment of their dinner.

Tea is taken at from 4 to 5 p.m. It really requires little comment. Perhaps the hour is too early, and makes the interval between it and breakfast too long. If delayed later it would deprive the soldier of his evening walk, and the change would be received with grumbling. It can be urged, while the soldier carries into the army the hours of eating of the working classes in his other meals, in his tea and supper he anticipates his former habits by several hours; it really adds to the necessity of further nourishment before turning in, as going to bed with an empty stomach is to be avoided. Coffee or tea, with bread and butter, lettuce, onions, watercresses, or other light things, which are

wholesome, and are better and more economical than meat; this is merely added in case the purchase of meat should be made by the soldier. Meat teas are not to be commended; tea is not adapted to accompany meat in the digestion, and is very likely to cause dyspeptic troubles. In many instances the hungry recruit has eaten his portion of bread for his breakfast, and there is absolutely nothing left for his supper. A modification of the rules for using bread seems to be imperatively required. If we are led to conclude that the hour of dinner is unalterable, through previous habit of life, as regards supper, in an economic and scientific point of view, it certainly should be postponed for another hour or two. On service, in camps of exercise, or foreign stations generally where the outside amusements of the soldier are few, the change could be made with advantage.

After 5 o'clock meal the regulations do not provide any more for the soldier, who, as long as he has money in his pocket, generally gets something at the regimental canteen or recreation-room bar; this is merely private expenditure, with which no interference can be made. The question naturally arises, whether this absolutely necessary amount of nourishment should be dependent on such fleeting and precarious finances.

In the beginning of this paper the dangers of a long fast were insisted on, especially in the case of growing lads. They are too exhausted to sleep comfortably, to rise with vigour, or to enjoy breakfast. The system is weakened and the digestive powers not ready when called upon, or there is a temptation to ravenous haste. The remedy for this is the issue of soup from the cook-house between certain hours in the evening or, as before mentioned, as in the navy, cocoa or chocolate might be served out. This basin of soup and a piece of bread is a sufficient meal in itself, and should be available for nothing to every man who applies for it. The soup could be made from the large bones of the rations: the sale of the refuse will generally be found to cover the cost of the vegetables, split peas, and flour required to complete the soup. This has been adopted in some regiments, and it is found that the applicants for the soup are usually those whose finances are low; and on the days immediately before pay-day there is often a difficulty in supplying the numbers. There is naturally a greater demand in the winter. A general adoption of this plan cannot be too strongly recommended.

A few words as to the times spirit rations should be issued. They

are best taken at meals—at dinner time preferably, never before. In Queen's Regulations, Section XV., Par. 103, it is laid down that malt liquor may be taken from the canteen to the barrack rooms for the men's consumption at dinner; this privilege is, however, not acknowledged by all commanding officers, and its observance should be universally insisted on.

ADDENDA.

For the clearer understanding of this important subject, shortly to be investigated by a Committee of the House of Commons, the actual official details of food and pay are appended:—

"*Food*.—Soldiers are provided with three meals a day, and the greater part of the food is supplied to them gratis. The hours of the meals are—breakfast about 7 45 a.m., dinner at 1 p.m., and tea at 4 30 p.m.

"Every day all soldiers are given $\frac{3}{4}$ lb. of beef or mutton, and 1 lb. of good fresh bread. There is no charge of any sort made for this, and it is entirely extra to their daily pay. The bread is given out in 4-lb. loaves, so that the usual custom is for four men to share a loaf, unless anyone prefers to have his portion separate. The meat is given out in joints as nearly as possible according to the number of men in one room: so, if there were 16 men in a room they would probably get a joint of about 10 lbs., and the exact weight made up by smaller pieces.

"Besides this bread and meat, which is called a 'free ration,' every soldier is obliged to spend about 2½d. or 3d. a day out of his pay for groceries—i.e., for tea, coffee, sugar, milk, vegetables, and some extra bread. Thus the actual food that is placed before a soldier every day of his life is the following:—

"At breakfast, a pound of bread and a large basin of coffee with sugar and milk.

"At dinner, the meat served out that morning, either stewed, baked, or boiled, or perhaps made into a thick soup, with plenty of potatoes, and the bread left from breakfast.

"At tea, a basin of tea with milk and sugar, and the extra bread bought with the groceries.

"If a soldier likes to spend a penny or two besides, he can go to the canteen and buy some butter, cheese, or bacon, to help down the dry bread at breakfast and tea, or get a pint of beer for his dinner. If he wants a little supper before going to bed, he can go either to the canteen for beer, or to the recreation-room for coffee, and it is quite likely that there may be some bread, or perhaps a little meat, left from dinner. If anyone happens to be away from barracks at mealtime, his portion is carefully put by for him; or if his duty keeps him away all day, he would be able to take it with him, or his dinner would be sent out to him.

"Another proof of the interest taken in the soldiers' welfare may be quoted—viz., that if a very early drill was ordered, or if any men had to leave barracks much before breakfast-time, they would be given a basin of hot coffee, paid for out of the canteen profits, in addition to their regular allowance.

"*Pay, &c.*—The details of pay of all the different ranks and branches of the army are so clearly shown in the official paper headed 'Advantages of the Army,' that it will be altogether unnecessary to go over that ground again here. But as it may be useful to take one or two cases, and by giving as nearly as possible the necessary expenditure, and taking into account the extras he receives, to see what sort of position a soldier has, and what are his opportunities for saving money.

"The lowest rate of pay is 1s. a day, and although that sounds absurdly small, let us see what the soldier has to do with it.

"In the first place he has a good lodging found him, with plenty of bedding, lights, and firing; therefore there is no expense on that score. As regards food, he gets every day a pound of bread and three-quarters of a pound of beef or mutton, so the chief part of his 'board' is found for him also; but there is some slight expense for extras to be mentioned presently. The main part of his clothing is also supplied gratis—viz., the cloth clothes, boots, &c., &c., and the soldier need incur no expense on that head; but the smaller details of clothing, i.e., shirts and stockings, &c., have to be maintained and paid for by him after the first issue has been worn out, it being borne in mind that the first issue of clothing is made complete and without charge, except a few pence for marking.

"The chief necessities of life being thus provided, there only remain some small items of compulsory expenditure. The groceries used for breakfast and tea, and the vegetables for dinner are paid for by the soldier at the rate of 3d. a day, and the washing of clothes at $\frac{1}{2}$ d. a day, making a total of 2s. 0 $\frac{1}{2}$ d. per week. Beer is to be got cheap and good at the canteen, and if a man drinks a quart a day, that will come to 2s. 4d. a week. Deducting these two amounts from the pay of 7s. a week, there remains about 2s. 6d. a week for what may be termed 'pocket-money,' out of which, of course, a soldier can easily provide himself with tobacco, extras in the form of butter or cheese at his meals, and still leave a few coppers in hand. In the Royal Artillery the daily pay is 1s. 2 $\frac{1}{2}$ d., and in the departments the lowest is about 1s. 6 $\frac{1}{2}$ d.

"This case has been taken as the very worst possible, but probably bears a good comparison with what many men have to put with in ordinary life, as the soldier is clothed, fed, and housed better than his civilian brother. And, moreover, the soldier has what is called 'Deferred Pay,' accumulating all the time at the rate of £3 a year, which will be given to him whenever he leaves the army. The amount of pay and style of living, as described above, begins the very first day a lad joins as

a recruit, and continues the same however stupid he may be at learning his new trade, or however uneducated he may be, and except through his own carelessness or crime he cannot be deprived of any of it. By a simple calculation it would appear that the allowances of bread and meat, lodging and firing, clothing and boots, which soldiers receive gratis, could not be obtained for less than 8s. 6d. a week; therefore this amount ought to be considered as added in every case to the soldier's actual cash payments."

THE INFLUENCE OF ALCOHOL ON DESCENDANTS.

SOME experimental researches made by M. Mairat and M. Combemale, and just communicated to the Academy of Sciences, on the degenerative influence of the use of alcoholic liquors on descendants, are very interesting. It may perhaps be a little premature to draw conclusions from animals to man, but the facts given are very striking as to the hereditary effect of alcoholic habits. A male dog was first experimented upon, and he was kept intoxicated with absinthe for a long time until he was in a chronic state of alcoholism; he was then permitted to have connection with a perfectly healthy young bitch. She gave birth to twelve puppies, two of which were born dead, and the rest died from various pathological troubles within two months of their birth. Some had epileptic attacks, others had intestinal troubles, and several had pulmonary or peritoneal tuberculosis. Careful autopsies were made, and in all the cases lesions were found showing alcoholic degeneration, thickening of the cranial bones, adhesions between the dura mater and skull bones, difference in weight between the two cerebral hemispheres, and fatty degeneration of the liver. The second trial was made on a vigorous female dog, which, during the last three weeks of gestation, was kept in a state of intoxication with alcohol. She gave birth to six puppies, three of which were dead. The three living ones were not badly formed, but were not at all intelligent. The third one of them was a female, and great difficulty was found in raising her. This showed the influence of alcohol on the first generation. In order to show its effect on the second generation this same slut was kept, and in due course was impregnated by a healthy male dog, by which she had three puppies only. One of them had club-foot and an atrophy of several toes; another died of atrophy, and had patency of the foramen ovale of the heart; the third had atrophy of the hind legs and tabes mesenterica. Strong arguments might be drawn from these experiments for temperance societies and hygienic use, but it may be well to await the final result of this form of study, which is to be followed up.—*New York Medical Journal*, April 7, 1888.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

THE THEORY OF FEVER.

1. *The Nature of Fever.* By DONALD MACALISTER, M.A., M.D., F.R.C.P.; Fellow of St. John's College; University Lecturer in Medicine, and Physician to Addenbrooke's Hospital, Cambridge. London: Macmillan & Co. 1887. 8vo. Pp. 46.
2. *Fever: a Clinical Study.* By T. J. MACLAGAN, M.D. London: J. & A. Churchill. 1888. 8vo. Pp. 166.
3. *Antipyretics.* By DONALD MACALISTER, M.A., M.D., F.R.C.P.; Fellow and Lecturer St. John's College, Cambridge.

OF the three notable contributions to the ever-fresh and fascinating subject of "Fever," which we propose to notice in the present article, two owe their origin to Lectureships founded long years ago in connection with the Royal College of Physicians of London.

In 1887 Dr. Donald MacAlister was chosen to give the "Goulstonian Lectures" before the College, in accordance with the will of Dr. Theodore Goulston, a Fellow of the College, who died on May 4th, 1632, and by his will bequeathed to the College a sum of £200 "to purchase a rent-charge for the maintenance of an annual lecture, to be read within the College some time between Michaelmas and Easter, by one of the four youngest doctors of the College." A dead body was, if possible, to be procured, and one or more diseases treated of, upon the forenoons and afternoons of three successive days.* Dr. MacAlister chose for the subject of his lectures the "Nature of Fever," and the paper-bound *brochure* before us is a reprint from the *Lancet* of March 12, 19, and 26, 1887, in which the lectures appeared as they were delivered.

* The Roll of the Royal College of Physicians of London. By William Munk, M.D., F.S.A. Second Edition. Vol. I, page 157. 1878.

In 1888 the Royal College of Physicians did Dr. MacAlister the further and deserved honour of electing him the Croonian Lecturer for this year. Dr. Munk* informs us that Dr. William Croone, who died of fever on October 12, 1684, a Fellow of the College, and one of the original Fellows of the Royal Society, left behind him a plan for two Lectureships, which he had designed to found—one series of lectures to be read yearly before the College of Physicians, with a sermon to be preached at the Church of St. Mary-le-Bow; the other series to be delivered yearly before the Royal Society upon the “Nature and Laws of Muscular Action.” Dr. Croone’s will contained no provision whatever for the endowment of these lectureships, but his widow, who subsequently married Sir Edwin Sadleir, Bart., carried out his intention, by devising in her will “The King’s Head Tavern, in Lambeth-hill, Knight Rider-street,” in trust to her executors, to settle four parts out of five upon the College of Physicians, to found the annual lecture, now called the Croonian Lecture, and the fifth part upon the Royal Society.

In response to the request of the President and Fellows of the College that he would deliver the Croonian Lectures in 1888, Dr. MacAlister proposed to discuss—(1.) the light thrown on the nature of fever by the means employed successfully for its treatment; and (2.) the lessons in the treatment of fever which flow from a right understanding of its nature. It will thus be seen that the Croonian Lectures of 1888 are a sequel of the Goulstonian Lectures of 1887.

And here, upon the threshold of this review, it may be well to remark that both the authors before us—Dr. MacAlister and Dr. MacLagan are at one as to the meaning to be attached to the word “Fever.” Dr. MacAlister puts this very well in his first Goulstonian Lecture, when he says:—

“In the first place it is necessary to state what I mean by *fever*. I need hardly say that I do not refer exclusively to the specific infective diseases grouped together as the ‘eruptive’ or ‘continued’ fevers. I speak of the condition of feverishness or pyrexia which is common to these diseases and to many others—the disordered inward condition of the body-heat, whose frequent and most manifest outward sign is high temperature. It is of course true that the term fever conveys to our mind a more complex notion—it implies, in general, disorder of the circulation and the respiration, of secretion and digestion, of the nervous

* *Loc. cit.* Page 370.

system and the muscular system, as well as of the body-heat. But without saying, as some have said, that all other disorders of function which we describe as febrile are merely consequences of disorder of temperature, I shall not be going too far if I state at the outset that the *essential* fact in fever—the condition which is always present whether other of its symptoms are present or absent—is disorder of the body-heat.”

To the same effect Dr. MacLagan writes:—

“Fever is not a distinct entity, but a collection of various phenomena the co-existence of which in the system is conveniently characterised by the term ‘fever.’ Of these phenomena the most constant and characteristic is increased body-heat. So prominent is this feature of the febrile state that a rise of temperature is generally referred to as fever; a patient whose temperature is raised is said to be feverish, and the terms ‘fever’ and ‘increased body-heat’ have come to be regarded as synonymous. Thus in our own day, as in the days of Galen, *calor præter naturam* is looked upon as the pathognomonic feature of fever.”

We refer more particularly to these statements because on a former occasion,* when reviewing Dr. Hilton-Fagge’s treatise on *The Principles and Practice of Medicine*, we were at some pains to insist that the words “fever” and “pyrexia” should not be used as convertible or synonymous terms. It is useless to deny that modern custom is against our contention, but we still think that the twofold meaning attached to the one word “fever” is likely to cause confusion. Far better would it be to restrict the word as a generic term, to describe that group of diseases which includes the continued, eruptive, and intermittent fevers, meanwhile adopting the word “feverishness” as a translation of “pyrexia,” to denote that group of phenomena, of which the most striking is elevation of bodily temperature above the normal.

In the first of his three lectures Dr. MacAlister discusses and rejects in turn the retention-of-heat theory of Traube and the heat-regulation theory of Liebermeister and the late Hilton-Fagge. According to Traube, “pyrexia is due to a diminished discharge of heat from the surface of the body, and this to a powerful contraction of the arterioles of the skin.” The experimental researches of Liebermeister, Leyden, and Senator Wood, of Philadelphia, and others, go to show that “heat is *not* abnormally retained in the body during fever; on the contrary, it is excessively

* See Vol. LXXXIII. January, 1887. Page 86.

discharged." The foundation of the retention theory being thus undermined, the theory itself falls to the ground. Liebermeister takes up the position that "pyrexia consists, not in a mere rise of the temperature of the body, still less in increase of heat-generation, or in diminution of loss of heat, but in a change in the normal function of heat-regulation by which the production of heat and its loss are so balanced as to create and maintain, while the pyrexia lasts, a higher temperature instead of the normal temperature. One might imagine the index of the regulating machinery to be shifted upwards, so that it is 'set,' not at 98.4° , but at 101° , 102° , 103° , or even at a still higher point." This ingenious theory is fairly criticised by Cohnheim when he says that it has "*ein gewisser mystischer Beigeschmack.*"

In his second lecture Dr. MacAlister speaks of a forecast of the "tissue-origin of fever" having been made by Dr. Burdon-Sanderson, in a classical article on the "Process of Fever," contributed by him to the Reports of the Medical Officer of the Privy Council for the year 1875. Dr. MacAlister starts with the axioms that—(1) Fever of necessity implies (a) a disorder of the thermotaxic mechanism, (b) an excessive production of heat associated with excessive chemical changes in the tissues—the excessive production being more or less than that of a normal patient on full diet (perhaps oftener less than more), but more than that of a normal patient on fever diet; and (2) the body-temperature, depending on the state of the balance between production and discharge, fluctuates as one or the other is in the ascendant, and is not *per se* a true measure of either, or of the consumption of tissue which may be going on.

Dr. MacAlister then proceeds to describe in detail certain experimental and other considerations, which lead him to what he calls "a provisional generalisation." According to this, not the visceral and vascular muscles only, but all the muscles of the body, have their double nerve-supply. The one set of fibres are essentially catabolic—they set up disintegrative changes in the muscle, which are manifested first by thermogenesis, and secondly by contraction. The other set of fibres, whose path is perhaps anatomically different, are essentially anabolic—they set up constructive changes in the muscle, which are manifested by inhibition of motion on the one hand, and the absorption of energy

* Hilton-Fagge. The Principles and Practice of Medicine. Vol. I, page 40
London: J. & A. Churchill. 1886.

on the other. Heat production in the muscles, the chief furnaces of fever, is probably carried on then under the influence of a two-fold nervous mechanism, the one part exciting to thermogenesis, accompanied by destructive metabolism; the other staying thermogenesis, and sub-serving constructive metabolism.

In his third lecture Dr. MacAlister discusses the relations of this nervous mechanism to the central nervous system and to the heat-adjusting, or "thermotaxic," mechanism. He sums up his conclusions in the following sentences:—"The thermal nervous system has three parts; let us call them briefly the thermotaxic or adjusting, the thermogenic or producing, and the thermolytic or discharging mechanism. Disorder of the first implies irregularity of temperature only, disorder of the first and second implies, in general, heightened temperature and increased body-heat—that is, ordinary fever; disorder of the first, second, and third implies, in general, hyperpyrexia, dangerous increase of heat, and steadily *rising* temperature."

The author remarks further that in the ascending scale of evolution we seem to rise from the thermolytic to the thermogenic and thence to the thermotaxic nervous system. Cold-blooded animals possess the mechanism that in mammals becomes thermolytic—a nervous mechanism that controls the vessels and the breathing. We cannot easily throw a frog into an enduring fever. In young mammals the thermogenic system is developed before the thermotaxic—hence a slight cause sends an infant into a "high fever;" a little restores it again. As the child grows, the thermotaxic mechanism is evolved, and its temperature grows stable.

Regarding the thermal mechanisms as a functional and evolutionary hierarchy, Dr. MacAlister looks upon fever as a "dissolution"—a progressive negative process, a relaxation of control from above downwards—in the same sense (and with the same reservations) that the term is used by Dr. Hughlings Jackson in his "Croonian Lectures" of 1884. As a last test of this "dissolution" hypothesis, he instances the mode of recovery from a typical febrile attack—the thermolytic mechanism is first waked to adequacy, and the result is a critical sweat, relaxation of the vessels of the skin, and a sudden fall of surface temperature; next, thermogenesis becomes less and less excessive; and, lastly, thermotaxis—the first to be disturbed and overthrown—is at length restored, the patient's temperature becoming more and more stable.

Such is a brief sketch of the very ingenious "Theory of Fever" which Dr. MacAlister has put forward, and to which the author next on our list acknowledges his indebtedness.

Dr. T. J. MacLagan begins his "Clinical Study" of Fever with a historical *resumé*, extending from Galen to Ord, and embracing the views of Virchow, Traube, Liebermeister, and Leyden. "In our own day," he observes, "as in the days of Galen, *calor præter naturam* is looked upon as the pathognomonic feature of fever." "'Fever' and 'rise of temperature' cannot with strict accuracy be regarded as synonymous terms. There may be fever without rise of temperature (as in the advanced stages of some bad cases of pneumonia and typhus), and there may be rise of temperature without true fever, as in some cases of cerebral disease."—(Page 1.)

The author proceeds to describe the two modern theories of pyrexia—the *neurotic* and the *metabolic*. According to the first of these theories, the rise of temperature is due to impairment of that inhibitory force by which the heat-producing process is kept within normal physiological bounds. According to the second, or metabolic theory, the rise of temperature results from increased activity of the process by which heat is naturally formed. As Dr. MacAlister, perhaps, would say, pyrexia depends on impaired thermotaxis and exalted thermogenesis. These two theories—the neurotic and the metabolic—are not antagonistic, but each is complete in itself.

In a chapter, or section, on the "Neurotic Theory of Fever," Dr. MacLagan quotes the experimental researches of Dr. B. C. Wood, of Philadelphia, which were instituted to prove a mutual relation between high temperature and cerebral disturbance. Our author criticises Dr. Wood's conclusions, and correctly holds that the view that the nervous symptoms of pyrexia "are caused by the high temperature lacks the clinical support which would commend it to our reason."—(Page 14.) Dr. Wood, however, starts the neurotic theory which has in a modified form been ably advocated by Dr. Hale White,* who believes that "in specific fevers, inflammations, traumatic and urethral fevers, the rise of temperature is due to peripheral stimulation of afferent nerves reflexly affecting the calorific centre."

The parts which go to form the thermal apparatus are:—(1) The tissues in which heat is formed; (2) the surface from which heat is eliminated; (3) a central controlling power in the nervous

* Practitioner. January, 1886.

centres; (4) nerves connecting this with the heat-forming parts of the body; and (5) nerves connecting it with the heat-eliminating surface. The harmonious working of these different parts of the thermal apparatus gives rise to the phenomena of thermogenesis, and the general result is a persistent temperature of 98·4°. Interruption of this harmony causes the temperature to rise or fall. Fall of temperature is due either to lessened formation or to increased elimination of heat. Rise of temperature is produced either by increased formation or by decreased elimination. All cases of hyperpyrexia, including that of hysteria, of heat apoplexy, and of acute rheumatism, are to be regarded as of neurotic origin—as due to some cause which exercises a paralysing influence on the heat-inhibiting function. “Hyperpyrexia,” in a word, “is due only to defective inhibition.” Dr. MacLagan concludes that “it is evident that the neurotic theory of fever rests on a very adequate basis.”—(Page 34.)

In proceeding to discuss the “Metabolic Theory of Fever,” Dr. MacLagan very correctly adopts the view, advocated by Sir William Jenner more than thirty years ago,* that the cause which makes the fever is the poison which enters the system from without, that the action of this poison is primarily on the blood, that the earlier and later phenomena of fever are all due to this action, and no part of the body can be excluded from the effects of such action. Dr. MacLagan properly adds that it is not the *presence* of the poison in the system, but its *reproduction* and multiplication there which gives rise to the febrile phenomena. The poison of each of the specific fevers is an organism, which in its growth and reproduction in the system consumes the same materials as the tissues of the body themselves consume—namely, nitrogen and water.

Having pointed out that the essential phenomena of fever are:—(1) Wasting of the nitrogenous tissues, (2) increased consumption of water, (3) increased elimination of urea, (4) increased rapidity of the circulation, and (5) præternatural heat—the author goes on to apply the above view of the nature and mode of action of contagia to the explanation of each of these phenomena.

As regards *wasting*, he shows that a necessary result of the reproduction of the contagium in the system during the course of the specific fevers, is the consumption by it of the nitrogen of the “constructive store albumen”—that portion of the circulating

* British and Foreign Medico-Chirurgical Review. April, 1856.

albumen which is derived from the assimilated ingesta, and is intended for the nutrition and building up of the tissues. This direct loss of nitrogen is, then, one of the primary causes of that rapid wasting of the nitrogenous tissues which forms one of the characteristic features of the specific fevers. But, though a primary, this is not a sole, agency in producing loss of bulk. The protoplasm of the contagium consumes not only nitrogen but also water, of which seventy-four out of a hundred parts of human flesh consist. Hence result the symptom of *thirst*, and further loss of bulk.

Again, if the propagation of the contagium in the system is competent to cause an increased flow of "retrogressive store albumen"—that portion of the circulating albumen which is derived from the retrograde metamorphosis of the tissues and is destined for excretion—through the urea-forming glands, it is competent to cause *increased formation of urea*. Of its competence to do this, there can be little doubt. Another and essential phenomenon of fever—namely, *rapidity of the circulation*—intervenes to promote increased elimination of urea, for the more active circulation the more active, *ceteris paribus*, will be the tissue-changes.

Lastly, another and necessary result of increased tissue metabolism is *increased production of heat*. Speaking of this, Dr. Mac-lagan is careful to point out that the view which regards the action of the contagium as being on the blood and tissues has much more to commend it than that which would attribute it to an action on the nervous centres. To call the resulting fever neurotic would be most inaccurate.

Having drawn attention to, and explained, *decreased* elimination of urea as an occasional incident in the specific fevers, the author proceeds to state the connection between the febrile state, as it presents itself in these diseases, and the elimination of urea, as follows:—

"The febrile state is always accompanied by increased formation of urea, and by increased consumption of water, the two chief ingredients of the urine. So long as the quantity of water at the disposal of the kidneys is sufficient for the purpose, there is increased elimination of urea. In severe cases, in which there is a large propagation of contagium particles, the balance is apt to be disturbed; there is, in them, a very great consumption of water, and a coincidently great increase in the amount of urea formed. The kidneys are thus placed in the position of

the Israelites of old, when they were ordered to make bricks without straw; they have more than enough urea, but scarcely any water with which to form urine. If this abnormal state of affairs be not excessive, or do not continue too long, the difficulty may be tided over, with no more than an anxious and smart attack of fever, accompanied by very scanty excretion of urine, but not by any very marked renal complication. If the disturbance be excessive, however, and manifest itself at a comparatively early period of the attack, renal symptoms are inevitable; albumen appears in the urine, then casts of the renal tubes are detected, and even blood may appear; there is (*sic*) greater or less retention of urine, greatly diminished excretion of urea, and very prominent nervous symptoms; the patient either lapses into a state of coma, in which he dies; or makes the narrowest of escapes.”—(Page 59.)

At page 60 of his work, Dr. MacLagan begins to explain the clinical features presented by the essential fevers—and especially the nervous and “typhoid,” or ataxic, symptoms—in the light of the theory of fever which he has adopted. His views are well summarised in a single sentence, on page 83 :—

“Be the symptoms of asthenia present (the ‘typhoid state’) or absent, however, the nervous symptoms are due to one and the same cause, defective nutrition of the nervous centres, consequent (*a*) on the consumption by the contagium particles of the materials necessary to the nutrition of the brain, and (*b*) on the retention in the blood of excretory products.”

At page 77, the author alludes to and correctly explains a form of post-febrile delirium to which Graves first prominently directed attention, and which is anæmic in nature. He quotes Murchison’s observation* that such attacks are attended not by fever or headache, but by anæmia and nervous depression, and are therefore benefited by sedatives and stimulants—we would add also by abundance of food.

Dr. MacLagan points out that the principal changes noted after death in the specific fevers are observed in the brain and in the heart. The most striking intracranial change noted in connection with the head symptoms of fever is atrophy of the brain—diminished bulk of the cerebral substance. The waste of brain tissue depends on acute inanition, with increased disintegration of the brain substance, and it is the propagation of the contagium which disturbs the process of nutrition. As to the heart, the author does full justice to the classical researches of Laennec,

* Continued Fevers of Great Britain. Second Edition. Page 205.

Louis, Stokes, Rokitansky, Murchison, Zenker, and Joseph Bell, and he concludes that the cardiac softening of fever "results from coincident defective nutrition and increased disintegration of the muscles of the heart: the defective nutrition being due to the consumption by the contagium particles of the nitrogen and water which ought to go to build up the cardiac muscles; the increased disintegration being due to the continuance, in even an increased degree, of those changes which result in their disintegration."—(Page 90.) "Those striated fibres, which have most to do, suffer most from the combined influence of defective nutrition and increased disintegration." Hence it is that the walls of the left ventricle are always more soft and friable than those of any other part of the heart; and hence also the changes which take place in striated muscular fibres during the course of idiopathic fever are always more marked in the cardiac walls than in the voluntary muscles.

Dr. MacLagan's explanation of the occurrence of the characteristic local lesions of the specific fevers—such as the rash of small-pox, the sore-throat of scarlatina and its rash, the bowel affection of typhoid, the rash of typhus, and so on—is ingenious. He first of all draws a distinction between ordinary poisons and those of specific fevers, and points out how they differ in their respective modes of action. Instead of adopting the view that the local lesions result from an action similar to that by which ordinary medicinal and poisonous agencies produce their local effects, he proceeds to show that the primary and essential condition of the local lesion of each of the eruptive fevers is an increased afflux of blood to the affected part—hyperæmia. But the contagium is also a parasite, and, as such, requires a special "nidus" for its propagation. Through its blood-supply this nidus affords the contagium-particles the nitrogen and water requisite for their organic growth; but, in addition, it is the seat of that peculiar action which the term "fecundation" implies, and without which the contagium particles cannot be reproduced and propagated. In keeping with this view, the poisons or germs of the specific fevers should be most abundant in the seat of their characteristic local lesions, and so they are. The poison of small-pox, for instance, is most abundant in the pustules; that of typhoid fever, in the stools.

The contagiousness of a given fever depends on two things:—first, on the readiness with which the contagium passes into the

surrounding atmosphere from the bodies of those suffering from it; and, secondly, on the readiness with which it reaches its "second factor" in the systems to which it gains entrance. In the light of this theory Dr. MacLagan explains the varying degrees of severity in which the same form of fever occurs in different people, the immunity against second attacks of the same fever, the cessation of the febrile symptoms and their fixed duration in the case of each several specific fever.

Did there exist a specific fever in which the second factor existed in the blood, and was localised in any particular organ or structure, the distinctive feature of that fever would be, not a local lesion, but *the course of the febrile symptoms*. Such a fever is relapsing fever. The peculiarities by which this disease is distinguished from the eruptive fevers are as follow:—

1. It possesses no characteristic local lesion.
2. During the fever a foreign organism—the spirillum—is found in the blood.
3. The course of the febrile symptoms forms the distinctive feature of the disease.
4. One attack confers no immunity from a second.

The ultimate end of any theory of fever being—in the words of Dr. MacLagan—"to afford a basis for a rational system of treatment," we find that both Dr. MacAlister and he supplement their investigations into the theory of fever with a discussion of the rational treatment of the pyrexial condition. In his "Croonian Lectures" for 1888, Dr. MacAlister—as we have said—supplies a sequel to the "Goulstonian Lectures" of 1887, and places before us the lessons in the treatment of fever which flow from a right understanding of its nature. Dr. MacLagan, regarding the question of treatment as a purely clinical one, considers it from a clinical standpoint under the headings—(1) the treatment of the specific fevers, (2) that of the malarial fevers, (3) that of rheumatic fever, and (4) the action of febrifuge remedies. Dr. MacAlister points out that, as the chief pathogenic factor in the specific fevers is apparently the specific virus, our first object of search must be for a specific remedy capable of destroying or counteracting the virus. Both authors agree that the action of quinine in malarial fever, and of salicylic acid and its congeners in rheumatic fever, is of this nature, so that the claim of these drugs to be antipyretics rests largely on their specific action. Dr. MacLagan, recalling that the cause of the specific fevers, and of their symptoms or

"phenomena," is the propagation in the system of minute organisms, shows that the action of these organisms may be met, and the course of the fever arrested or modified, in one of three ways—(a) by the destruction of the organism by a "germicide" like quinine in ague, or salicylic acid in acute rheumatism; (b) by rendering the system insusceptible to the action of the organism, as, for example, efficient vaccination prevents small-pox; and (c), failing these two, by guiding the patient through his illness and preventing the poison from producing fatal results. To this last method we are at present restricted in the case of most of the continued and eruptive fevers, although a time may come when a specific germicide will be known for each specific fever.

The concluding section of Dr. MacLagan's treatise, and the greater portion of Dr. MacAlister's lectures are devoted to the action of antipyretic, or febrifuge, remedies. The chief of these are—cold, quinine, salicin and salicylic acid, antipyrin, antifebrin, thallin, kairin, and phenacetin. "Cold," says Dr. MacLagan, "is the most powerful antipyretic we possess." According to Dr. MacAlister, however, there is good ground for the belief that, in fever, the lowering of temperature is a "secondary phenomenon, the lowering of nitrogenous excretion a primary one." Summing up the results so far obtained, it appears that antipyrin increases skin-radiation, diminishes the difference between peripheral and central temperature, lowers the temperature as a whole, diminishes thermogenesis, diminishes the production of nitrogenous waste, and therefore nitrogenous metabolism, and frequently (but not always) increases perspiration, while it generally slows the heart and slightly increases the tension of the radial artery. Antipyrin, therefore, in a review of all its properties, is to be classed as a true antipyretic, and not merely as a refrigerant. It represses thermogenesis, and at the same time does something to make thermolysis more efficient. It imitates Nature; it produces an artificial crisis by the same mechanism that Nature uses in producing a true crisis. In neither case, however, is thermotaxis at once restored. Antipyrin also does not cure the specific fevers, as quinine does ague, or salicylic acid does rheumatism; it only allays the pyrexia. Lastly, antifebrin is especially to be commended for its smaller dose and its cheapness, more particularly as it has proved an efficient and pleasant antipyretic and analgesic.

Such is a brief analytical review of three most thoughtful and instructive treatises. There are, of course, passages in them to

which exception might be taken, as when Dr. MacLagan says that "the mousy odour of a typhus patient would suggest the possibility of that disease being allied to some disease of the common house mouse." But such questionable statements are few and far between, and we rise from the study of the triad of works before us with the conviction that they together form an epoch-making and classical contribution to the literature of the "Theory of Fever."

THE EDITOR.

Anæsthetics : their Uses and Administration. By DUDLEY WILMOT BUXTON, M.D., B.S., M.R.C.P., &c.; Administrator of Anæsthetics in University College Hospital, the Soho Hospital for Women, and the Dental Hospital of London. 1888. 8vo. Pp. 160.

THIS book has been, the author tells us, "written purely from the stand-point of every-day practice." It were well that this principle actuated many more of our modern medical writers. For it can hardly be gainsaid that much of the padding of medical text-books, so far as the requirements of the practitioner are concerned, might well be cut out. The difficulty, amidst the legion of authors, is to find one who is satisfied with giving the necessary information requisite for "every-day" practice, avoiding abstruse disquisitions on disputed theories and modes of treatment, which the average practitioner has neither the time nor the inclination to trouble himself about. Evidently Dr. Buxton, having conceived the idea that there was a want of a handy manual, giving in condensed but sufficiently clear and explicit language all the necessary knowledge of anæsthetics demanded in ordinary hospital or general practice, kept well to his plan, and, as a result, he has produced a thoroughly useful and valuable little work on a most important subject, and with which his special experience enables him to deal thoroughly. And here we would urge the advantage of a short special course on anæsthetics as part of the training of every medical student. It is a fact, that the majority of students finish their hospital course without having had any opportunity of administering an anæsthetic under the supervision of a skilled and experienced anæsthetist. Nor have they been taught the necessary precautions to be taken before, during, and after the administration. Those who have occasionally to entrust the administration of ether or chloroform to some assistant who has had no special instruction or experience

in their use, must acknowledge how his anxiety and responsibilities are increased, and his attention diverted by the dangerous and often reckless acts of the administrator. It is a matter for surprise how readily men undertake to administer chloroform or ether who are quite ignorant of the proper mode of administration, the true signs of danger, and the immediate management of the patient when alarming symptoms are observed. Such men forget how they may sacrifice the success of an operation, or its completeness, by distracting an operator, who has his attention diverted to the administration of the anæsthetic and the increased risk to his patient through ignorance on the part of an administrator. Skilled administrators are not always at hand, and it must constantly happen in every-day practice that the average practitioner has to administer the anæsthetic. It is for these latter that a manual such as that before us is indispensable. Much may be said on the side of always having the special anæsthetist who devotes himself solely to the administration of anæsthetics, and who, in great degree, absolves the operator from responsibility during their administration. It promotes greater confidence on the part of the patient, less haste and diversion of his attention to the patient's state on the part of the operator, gives more freedom for action to other assistants, and in the event of dangerous symptoms arising, while securing more rapid completion of the operation, gives to the patient that additional chance of experienced action in emergency which must follow from the daily familiarity with such complications. But it is only in large cities that such total devotion to this indispensable adjunct of surgical practice can be hoped for. Hence it is that all medical men who may be called on to give chloroform or ether, or other anæsthetic, should thoroughly master the more important details of their ordinary action, and the occasional accidents or complications which may unexpectedly arise during their use.

A few years since (1880), in successive issues of this journal, the writer of this notice was permitted to review at considerable length the history and the action of the various kinds of anæsthetics and anæsthetic mixtures which have been employed since the first administrations by Wells, Davy, Long, Morton, Jackson, Simpson, Furnell, to the date of the articles referred to. Very little of practical value has been added to our knowledge since the death of the distinguished anæsthetist, Clover, and but few suggestions worth noticing have been made. This observation does not

obviously include the resort to local anæsthesia by the aid of cocaine, whether applied superficially to the mucous surfaces, or injected subcutaneously, with or without temporary arrest in the circulation of the part anæsthetised, nor yet to the resort to hypnotism for the relief of pain. *Ether*—we still remain strong advocates, on the same grounds as those taken in 1877–1880, for the use of ether in all cases in which it can be employed. We specially except young children and parturient women. For both these we incline to the use of chloroform. Dr. Dudley Buxton enumerates the conditions which contra-indicate the use of ether. Briefly, they are as follows—(a) protracted operations, and (b) those operations requiring the employment of a cautery or any lighted lamp or candle in the neighbourhood of the mouth or naso-pharynx; (c) in certain cases of bronchitis, asthma, and emphysema; (d) in patients suffering from renal disease; (e) in persons with atheromatous arteries; (f) in infants; (g) possibly in patients suffering from brain tumours (Wood). To these exceptions we would add that of those patients who have irritable stomachs, and are prone to attacks of gastritis and gastro-intestinal catarrh. Such persons, especially women, are liable to incessant sickness and general gastric disturbance after prolonged administration of ether. Such general disturbance may seriously complicate the result of an operation. In fact, we deem the question one for much more serious consideration than is often bestowed on it—whether in a prolonged operation, in which much blood is likely to be lost, on women who have susceptible stomachs, the A. C. F. mixture, or methylene, should not be substituted for ether? We certainly incline to the use either of methylene or chloramyl. In the short article on anæsthetics in the *Annual of the Universal Medical Sciences*, 1888, by Dr. Henry Lyman, of Chicago, will be found a condensed summary of recent contributions to the literature of this subject. The author arrives at the conclusions that ether is contra-indicated in cases of nephritis, chronic bronchitis, and in those cases that resist its anæsthetic effect. Of this latter class we would say sufficient account has hardly hitherto been taken. They are not a numerous class, but they are sufficiently so to make us remember the truth of Dr. Lyman's remark, that "they suffer the agonies of partial suffocation without loss of consciousness," perhaps for a considerable time before becoming insensible. Certainly, we believe that Dr. Dudley Buxton might have also added to his list "those in whom previous experience of the use of ether has proved the difficulty of its adminis-

tration, or those in whom prolonged resistance to its effects and absence of insensibility demonstrate that it is contra-indicated."

We still give the preference to Clover's portable ether inhaler for ordinary practice. The surgeon can, if he wishes, have this made so as to combine the use of nitrous oxide gas with the ether. We quite endorse Dr. Buxton's remark that it fulfils all the necessary requirements best, and that it uses less ether than any other. It is so simple, and yet so safe, that anyone can familiarise himself with its action. The mistake most commonly made with Clover's inhaler, we find, is, that the ether vapour is turned on too soon. The patient should be allowed to breathe tranquilly into the bag for some seconds before any of the ether is admitted to the face-piece, and this should be done slowly, the increase permitted in the quantity of ether as denoted by the indicator being very gradual. The second error of incautious or inexperienced administration is the common one of continuing unnecessarily, when ether sleep is complete, the full strength of the vapour. It is quite sufficient, as a general rule, to continue the administration with one-half or one-third ether. The third error is the continual close application of the face-piece once the patient is fully under the ether influence. Thus he is exposed to the risk of asphyxia from suffocation. Dr. Buxton draws attention to the important fact, so often forgotten, "that the amount of an anæsthetic required to produce narcosis is much greater than is needed to maintain that condition." It is widely known how the degree of narcosis must be increased and maintained in operations on the genital organs in women, and during ophthalmic operations—a fact which must be remembered by those undertaking the administration of an anæsthetic during such operations. We quite endorse the adverse verdict of Dr. Buxton on Ormsby's inhaler and all kinds of cones. They are without the means for careful regulation of the quantity of ether vapour used; they are far more liable to cause, especially in inexperienced hands, suffocation; there is with their employment much greater distress given to the patient, and consequent struggling; they are more wasteful.

Dr. Buxton divides his manual into twelve chapters. Prefacing the work with a brief historical sketch of anæsthetics, he passes in review over the necessary preparation of a patient for their use, the best time for administration, the question of choice of anæsthetic, the influence of disease, age, sex, and kind of operation on our selection. He discusses in separate chapters the employment

of nitrous oxide gas, ether, chloroform, other anæsthetics, and anæsthetic mixtures. He devotes special chapters to the consideration of "Anæsthetics in Obstetric Practice," "Anæsthetics in Special Surgery," "Accidents of Anæsthesia," "Local Anæsthesia and Cocaine," "the Medico-Legal Aspects of the Administration of Anæsthetics." There are many matters in these chapters which are of great interest to every surgeon concerned in the use of anæsthetics which are tempting to discuss. We can here only refer to a few on which the author gives us the benefit of his experience.

Time for Administering an Anæsthetic.—Dr. Buxton does not advise an early hour in the morning before food is taken, for the reason that at this time there is more nervous exhaustion and lowered vitality after prolonged fasts; he advises administration within three hours after a meal is taken. We cannot say that we have had any evidence of the early morning hour being prejudicial to the safe administration of an anæsthetic, provided two rules are remembered—first, to give the patient, about three hours before the operation, some strong beef-tea, or some Liebig's essence, and a small quantity of brandy; and, secondly, to ensure, especially in winter, the proper heating of the apartment in which the operation is to take place. Particularly necessary is this in the case of ether, and when a prolonged operation, necessitating any exposure of the body, is undertaken. In asthmatic and emphysematous patients, Dr. Buxton prefers the A. C. E. mixture (alcohol, sp. gr. .838, 1 part; chloroform, sp. gr. 1.497, 2 parts; ether, sp. gr. .735, 3 parts), as also in renal cases, and in those cases of heart affection where, in consequence of lung complications, ether is contra-indicated. As he rightly points out, it is not so much to the valves of the heart that experience has shown we have to look for danger, as to the condition of the muscular structure, its feeble action and possible degeneration. The time of operation may be an important consideration in the case of such patients. Some occurrences which recently happened to us are worth mentioning with regard to *the preparation of the patient*. A child was brought to our study for the removal of post-nasal adenoid growths. The parents were cautioned about giving any food. During the administration of the anæsthetic by Mr. Bailey, the child vomited a quantity of hard split peas. The nurse, desiring to quiet the child, had given him these on the way to the house. Any one of these hard particles sucked into the larynx might have caused fatal asphyxia.

In a similar operation most dangerous lividity ensued, which proved to be due to a long and hard plug of casein, which obstructed the larynx, the nurse having given the child a drink of milk a little time before the ether was administered. A more amusing incident, proving that we must not take the word of even a husband for the presence or otherwise of artificial *dentures*, occurred to Mr. Bailey and myself. Before operating on a lady for hæmorrhoids, her husband being still present, Mr. Bailey asked her if she had any false teeth. The husband rather indignantly repudiated the insinuation, whereupon the lady, seeing that Mr. Bailey was not quite satisfied without her own assurance to the contrary, quietly set the matter at rest by drawing out a front plate with two or three teeth attached, to the evident surprise of her spouse.

Conversation during Administration.—Dr. Buxton calls attention to two habits, rather common both in operating theatres and also with private cases, of the anæsthetist carrying on a conversation during the administration of an anæsthetic. In the only case of death from an anæsthetic which occurred in our presence this happened, and the patient, as in most instances of death from chloroform, was dead almost as soon as the ghastly shade of lividity spread over his face. Nothing should be allowed to interfere with the undivided attention of the administrator. But there is another reason for silence. Talking, during the early stage of administration, especially if allusions are made to the patient's disease, to the operation, or other matters connected with the sufferer's state, is apt to cause excitement, to alarm, and interfere with the quiet administration of the anæsthetic.

Premature Exposure and Incisions.—The other practice, due to impatience on the part of operators, is that of exposing the part to be operated on before the patient is unconscious, or commencing an operation before there is complete anæsthesia. We are taught a valuable lesson from the reflex stoppage of the heart in death from the use of chloroform in the extraction of teeth. Fatal shock, from the infliction of pain, when there is incomplete anæsthesia, is, perhaps, the accident that an impatient operator is most liable to lay at the door of an anæsthetist who is foolish enough to permit him to make the first incision before the anæsthesia is complete.

Choice of Anæsthetic—Methylene.—Much has been written of late on the action of bichloride of methylene. After many years of extensive personal experience of this anæsthetic (over 1,500

administrations) in persons of all ages, mainly in ophthalmic practice, we came to the conclusion that there was little advantage in methylene over chloroform or chloramyl. On the contrary, as it was then administered, in a gauze cone, we have seen some narrow escapes from its use. In old people, in those who were free livers, or who took alcohol in excess, and in very young children we found it, as a rule, a very dangerous anæsthetic. Its principal advantages were the assumed rapidity of action, and the absence of sickness. It is true that with some samples of methylene vomiting was not so common as with chloroform; but its purity varied, while exposure decidedly altered its constitution, and this deterioration considerably influenced its action on the stomach. Pure methylene, carefully given with Junker's inhaler, is, no doubt, an admirable anæsthetic, and in abdominal surgery, for prolonged operations, we have found it such. But we must emphatically condemn the older method of administration with a limited supply of air as most dangerous in principle. It was during administration in this manner that the greater number of deaths from methylene have occurred. Dr. Buxton inclines to the view of Eiccholz and Geuther, that methylene as used in England is only a mixture of methylene alcohol, with three and four-fifths parts of chloroform. In Germany it is a mixture of one part of methylene bichloride with four parts of chloroform.

Inhalers.—In the administration of methylene vapour, as of chloroform, the safest inhaler we know of is that of Junker. Dr. Buxton has modified the original apparatus of Junker by adding a foot-bellows to force the air through the chloroform instead of the hand-bellows as usually employed. Mess. Khroné and Seseman (the original makers) have recently modified Dr. Junker's apparatus, so as to give a continuous stream of air through the anæsthetic, maintaining thus a constant supply of the narcotic vapour. It is asserted that "through this continuity of the air current the evaporation of the chloroform is as follows:—viz., making in each minute 20 compressions of the bellows, the evaporation amounts to 60 minims during the first five minutes, and to 30 minims during each following five minutes; so that the patient inhales with each inspiration half a minim during the first five minutes, and a quarter minim during each succeeding five minutes." For general practice the small Clover's inhaler for ether, or Hewitt's improvement of it for nitrous oxide gas and ether, and Junker's inhaler for chloroform, are the two most valuable and reliable

instruments, being also portable. It were well that all who administer chloroform would read the remarks of Dr. Buxton on the deductions to be drawn from Snow's experiments, which demonstrate with what ease the lethal dose of chloroform (thirty-six minims) may enter the circulation and paralyse the respiratory centre. Hence, the danger of all cones and extemporised face-pieces, into which chloroform is often carelessly poured, and without measurement, the cone being then applied over the mouth and nose. It is no matter for astonishment that, as Dr. Buxton remarks, we have chloroform deaths ascribed to "idiosyncrasy" or the "fatty heart which stands inexpert chloroformists in such good stead."

Modes of Treatment.—We must refer our readers to Dr. Buxton's work for a summary of the most important methods of treatment in the event of complications arising during and after the administration of an anæsthetic. Sufficient evidence has not as yet been adduced to prove the value in the human subject of acupuncture of the right ventricle of the heart. Two unsuccessful cases have been already reported. From Watson's experiments on dogs it would seem as if the exciting effect of the needle should be assisted by the abstraction of blood from the ventricle. His experiments did not (ten resuscitations in sixty experiments) produce very encouraging results, while they showed that considerable danger attended puncture of the auricle. We believe that in all cases, when possible, and in every operating theatre, or place where anæsthetics are constantly given, *certain appliances should be ready at hand*. These are—mouth gag, tongue depressor, tongue forceps, a few sponge holders, tracheotomy trocar and tube, subcutaneous syringe, a few nitrite of amyl capsules, a little sulphuric ether, and, possibly, an electrical battery.

We quite agree with Dr. Buxton that a powerful current of electricity is just as likely to inhibit as to excite the heart's action—in fact, that this agent is a "two-edged sword," more useful to bring forward as a proof to an ignorant jury that everything that could be done was done than to assist in the resuscitation of the patient.

The experiment of MacWilliam would tend to prove that strong electrical stimulation of the heart may induce fibrillar contraction—irregular fluttering movement—causing irritability of the muscle fibre, from which the heart does not recover for some time; and he specially refers to the danger of these fibrillar contractions

in threatened death from syncope in the instance of chloroform administration.*

Insanity after Anæsthesia.—With reference to the fact recently referred to by Dr. Savage, that insanity may follow the use of anæsthetics, we would draw attention to the fact that such an occurrence has twice happened to us. In both instances the anæsthetic was ether, and the form of mental disturbance mania. In one case the patient recovered without removal to an asylum, but gave considerable trouble for some days, being violent and difficult of restraint. In the other the attack was of a more permanent character, demanding removal to an asylum, and we are not aware what was the sequel of the case. In neither case was there, that we are aware of, any previous history of insanity.

Antagonism of Nitrite of Amyl and Chloroform.—Dr. Buxton argues against the asserted antagonistic physiological action of nitrite of amyl to chloroform, on the grounds that it lowers blood pressure by producing paralysis either of the muscular coatings of the vessel or of the vaso-motor ganglia controlling them, and that its ultimate action is depression of the heart's action and syncope. Hence, he asserts that by using it with chloroform we are only still further prejudicing the patient's chance of recovery.

During the year 1879–80, soon after Dr. Sanford reported on the value of chloramyl as an anæsthetic, we tried the mixture of nitrite of amyl and chloroform, as recommended by him (3i. in the half-pound). We gave it for several operations by means of Junker's apparatus, lessening the proportion of nitrite of amyl as the administration was continued. It answered admirably in every instance. The face of the patient maintained a better colour than is the case with chloroform, the pulse did not fail, and the respirations were not hurried. The danger of death, even in the early stages of chloroform narcosis, from cerebral anæmia and attendant contraction of the arterioles is not to be forgotten. We believe that in cases of weak heart action, especially in asthmatic patients, the combination of nitrite of amyl is useful, if we limit its administration to the earlier stages of an operation, or, at least, considerably reduce the quantity as the operator proceeds.

Anæsthetics in Ophthalmic Surgery.—It is our belief that (excepting cocaïn) whenever anæsthetics can be dispensed with in ophthalmic operations, we do better without them. In enucleation and strabismus they cannot be dispensed with. For both operations we

* Annual of the Universal Sciences. Vol. V., p. 318.

prefer, ether in adults, chloroform in children, to cocaïn. In certain restless and nervous patients, and in cases of considerable increase of tension, chloroform or ether may be indicated. But, with these exceptions, we believe we gain more from the assistance of the patient and the absence of sickness and constitutional disturbance subsequently, than from narcosis during the operation. For the extraction of foreign bodies or other minor operations cocaïn is most valuable. Its effect on the tension of the globe must not be overlooked.

Cocaïn.—There is a short and well-written chapter on the action and uses of cocaïn, a valuable addition to the work, which might in some particulars have been enlarged. Of cocaïn as an anæsthetic we have had considerable experience, more especially in facial surgery: while in many ear, eye, mouth, and nose operations it is most satisfactory. There are occasional exceptions, when the operation appears to give as much pain as if no anæsthetic were employed. We have had one case in which, after the rather free application of a ten per cent. solution to the nose, previous to the removal of a fungous growth from the turbinated bone, alarming symptoms of syncope occurred, which did not cease for some little time. On another occasion, syncope threatened from the repeated application of a 20 per cent. solution to the conjunctiva for a minor operation. These occurrences prove that when using cocaïn we should have its antidotes near at hand; sal-volatile, brandy, morphin for subcutaneous use, and nitrite of amyl capsules.

Medico-Legal Aspects.—Dr. Buxton's manual concludes with a chapter which in itself would merit considerable discussion. It deals with such important topics as the question likely to arise in case of death from an anæsthetic:—Can an anæsthetic be given during sleep? (two such cases have been recently reported); attempted rape under anæsthetics; death from nitrous oxide gas, ether, chloroform; poisoning by chloroform, and self-indulgence in anæsthetics. Altogether, the little work to which we have drawn attention is just the class of book likely to meet the wants of the hospital assistant surgeon, or house surgeon, and the practitioner. It is clear, concise, and withal pleasant to read.

H. MACNAUGHTON JONES.

The Salisbury Treatment of Disease. Brief Statement of the so-called "Salisbury Plans" of treating, by alimentation, the various Diseases produced by Unhealthy and Indiscreet Feeding. By J. H. SALISBURY, M.D. Baillière, Tindall, and Cox. 1887.

DR. SALISBURY believes that many of the most serious diseases which befall humanity are to be ascribed to unhealthy or improper feeding, and he is sanguine enough to see no reason why we should not commonly reach, with clear heads and healthy bodies, a hundred and more years. The main points in his plans of treatment for all sorts of affections are these:—Plentiful draughts of very hot water (110° F.) before each meal, and before bed-time; broiled meat as the staple diet, coupled with precise directions as to regularity of hours, exercise, baths, clothing, &c. Dr. Salisbury's recommendations are backed up by Dr. E. Cutter, who contributes appendices upon the therapeutic action of the items of the Salisbury method.

The Diagnosis and Treatment of Eczema. By TOM ROBINSON, M.D., Physician to St. John's Hospital for Diseases of the Skin. J. & A. Churchill. 1887. Pp. 136.

WE took up this little book with a certain feeling of distrust, and a suspicion that it was addressed to the paying public rather than to the profession. But, while it is true that it is disfigured by some trivialities of style and expression, we must also admit that Dr. Robinson displays a good deal of shrewd observation, and that many of his views are sensible and his recommendations for treatment judicious.

Few superstitions are more prevalent than the reported connection between eczema and teething. "It is scarcely possible to treat such a belief with gravity. . . . Any close observer may convince himself that this malady occurs just as much after as before dentition, as Hebra points out so forcibly" (pp. 5-6). Pityriasis rubra Dr. Robinson believes to represent only exaggerated forms of eczema, and he is of opinion, not without justice, that to classify such conditions "in a separate group, as pityriasis rubra, is misleading, and introduces into the study of diseases of the skin difficulties which ought not to exist" (p. 67). In regard of treatment Dr. Robinson evidently leans more to local than to general measures; yet he is not a mere follower of Hebra, and he

puts arsenic in the front rank of skin tonics. To allay the itching of eczema Dr. Robinson tells us he has found nothing more effectual than sponging over the surface a lotion made with ten drops of carbolic acid and two drachms of spirit, in an ounce of milk or cream.

The Surgeon's Handbook. By FREDERICH VON ESMARCH. Translated by B. FARQUHAR CURTIS, M.D. 647 woodcuts. London: Sampson, Low, Marston, Searle, and Rivington. 1888.

THIS is a new edition of Esmarch's book, to which the first prize, offered by the Empress Augusta of Germany, was awarded some years ago. The peculiarity of the book is little letterpress and abundant illustration. It was originally intended as a handbook of military surgery, and while its purpose in that direction is still manifest and important, the present edition has a more extended scope. It is a book which every surgeon ought to possess. The suggestiveness of it is endless, and it is full of important and precise information as well. Few appliances and few methods of operation that are worth knowing are omitted. The character of the distinguished author is sufficient guarantee for thoroughness. The translator's work is excellently done, and the reading is smooth and attractive. The book is costly for its size, but it is worth the money.

Manual of Hypodermic Medication. By Drs. BOURNEVILLE and BRICON. Translated from the second edition, with additions, by ANDREW S. CURRIE, M.D., Edin. London: H. K. Lewis. 1887. Pp. 304.

THIS handy volume deserves commendation, and will be found very useful for reference. Comparing it with Bartholow's *Manual* upon the same subject (4th edit., 1882), one is struck by the large number of additional drugs which have been experimented with subcutaneously. The information is complete and yet concise, brought well up to date, and the authors do not omit to point out the disadvantages which have accrued, or are apt to accrue, from the use of certain drugs by the hypodermic method. Dr. Currie has not only executed the translation with care, but he has enhanced the value of the manual by the addition of a therapeutic index, a table of antidotes and antagonisms, a posological table, and a general index. The various drugs are described in alphabetical order, and a large number of formulæ are given for the preparation of the solutions.

PART III.

HALF-YEARLY REPORTS.

REPORT ON FORENSIC MEDICINE.

By H. C. TWEEDY, M.D., Dubl.; M.K.Q.C.P.; Diplomat in State Medicine, Trin. Coll. Dubl.; Fellow and Examiner Royal College of Surgeons; Physician to Steevens' Hospital.

1. The Post-Mortem Imbibition of Poisons.
2. Suicide in its Relation to Insanity.
3. A Case of Poisoning with the Oil of Gaultheria.
4. Anomalous Arrangement of the Large Veins of the Neck.
5. Nervous Diseases dependent on Spinal Concussion—"Railway Spine."

THE POST-MORTEM IMBIBITION OF POISONS.

CAN we distinguish chemically whether poison has been administered during life or introduced into the body after death, by an examination of the viscera? Such is the question that has engaged the attention of several eminent medical jurists on the other side of the Atlantic during the past year, and on which several important essays have appeared in the columns of the *Medico-Legal Journal*.

Lest it should be thought that under no circumstances could such a question really arise in actual practice we (*Med. Rec.*, July, 1888, p. 278) may briefly refer to the communication which formed the starting-point of the whole discussion. Dr. George B. Miller, in a paper in the *American Naturalist* in February, 1886, put the hypothetical case of a person having died from a natural cause and been buried, and after a few weeks someone who had between the death and the burial secretly introduced arsenic into the body then circulated a report that the deceased had been poisoned, the report gradually gaining ground until the exhumation of the body was ordered and an examination made. It would admittedly be of the highest importance that such a fraud should be detected. Nor is this quite such a hypothetical case as might be supposed, for the

defence that the poison had been introduced into the body after death has often been made in a trial for murder, and in one case, at any rate, the defence seemed to be founded on absolute fact, as the charge of murder was not proceeded with. The question may also arise under other conditions, as in the case narrated by Mr. Clark Bell,* who was consulted professionally under the following circumstances. An elderly man marries a wealthy maiden lady evidently for her money. After a time she dies with many of the symptoms of arsenical poisoning, and the husband immediately after death orders the body to be embalmed, and the whole abdominal cavity is filled with a solution containing arsenic. The physician in attendance had been puzzled, but, as the husband was a clergyman and much respected, the idea of poisoning had not entered his head; however, the wife had shown that she had suspicions of her husband, and had begged not to be left alone with him. Her relatives made a searching inquiry, which resulted in showing that the symptoms of her illness were consistent with arsenical poisoning, but owing to the embalming process it was thought that an autopsy would be of no use. It was also ascertained that the husband had made several marriages before, in two of which deaths had occurred in a similar manner, immediately followed by a like process of filling the abdominal cavity with arsenic in strong solution under pretence of embalming, but no proceedings had been instituted, though strong suspicions had been entertained by the relatives in one instance. The experts to whom the matter was referred agreed that, though they had little doubt of the guilt of the husband, the difficulty of proving the case against him was too great to justify them in advising a prosecution. He is still at large, therefore, and Mr. Bell concludes his account of the case by stating that he has married again. The question that Mr. Bell put and invited answers to, is whether it would be possible to detect and differentiate between the poison which caused death and that which was introduced under pretence of embalming the body, and he points out that as soon as a differential diagnosis can be made the body can be exhumed and examined, for it must contain enough arsenic to preserve it for many years to come.

In the following number of the same periodical appeared a paper by Prof. J. J. Reese, in which he stated his belief that such a discrimination as that referred to above could not be made, relying

* *Medico-Legal Journal* for June and September, 1887, and March, 1888, papers by Mr. Clark Bell, Prof. J. J. Reese, and Dr. George B. Miller.

upon chemical analysis alone, but he made the following suggestions as bearing upon the elucidation of this most intricate problem.

1. A knowledge of the symptoms if obtainable would frequently throw much light on the case, but too much stress should not be laid upon symptoms, as the symptoms in disease sometimes closely resembled those of poisoning. 2. The discovery of the poison in the urine might be regarded as very conclusive evidence of *ante-mortem* poisoning, as though the bladder might become contaminated by *post-mortem* imbibition, it was hardly probable that the poison would percolate through the coats so as to contaminate the urine. He admitted, however, that he could not dispute the possibility of such an occurrence. 3. The finding of the poison on the exterior of organs and not on their interior, would be good evidence of *post-mortem* imbibition, since in an *ante-mortem* case the poison is always deposited on the interior of an organ, quite as much as on its exterior; but in practice this would be a very difficult matter to decide. 4. The discovery of poison in the stomach would not be a proof of *ante-mortem* poisoning.

These somewhat slender threads on which to base a differential diagnosis, (and on which it may be observed Prof. Reese did not lay much stress, but rather put them forward in a tentative way) have been blown to the winds by Dr. George B. Miller.

In the March number of the same journal that writer details the experiments he made on rabbits in order to solve the question at issue. The œsophagus of a rabbit was opened immediately after death and a tube passed into the stomach. Down this tube the solution of arsenic was poured, the tube was withdrawn and the œsophagus ligatured below the incision into it. The brain, spinal cord, and urine were examined from rabbits thus treated that had been buried for thirteen, twenty-four, and twenty-nine days, the result being that the presence of arsenic was conclusively demonstrated in every specimen examined. He concludes that it has been demonstrated by his experiments that when a poison is introduced into the stomach it can actually imbibe, soak, and diffuse itself into the various organs of the body, and can be recovered from the liver, kidneys, spinal cord, brain, and interior of the urinary bladder. He thinks that in future chemical evidence must not be given the highest place as has hitherto been the case, but he holds that the microscopist may perhaps be able to discover some permanent appreciable difference, for it is not improbable that there may take place certain specific changes in the histological consti-

tments of an organ due to the deposition of a substance like arsenic through the medium of the blood circulation during life, which changes would not manifest themselves as the result of an after-death deposition.

The outcome of it is that it is pretty clear that we shall never be able by a mere examination of the dead body to give such evidence as would enable a jury to convict, and we should recommend Mr. Clark Bell to keep an eye on his clerical Bluebeard, and next time that that gentleman becomes a widower to step in and prevent the so-called embalming process from being carried out.

SUICIDE IN ITS RELATION TO INSANITY.

Dr. Reese, in his interesting address, delivered before the Medical Jurisprudence Society of Philadelphia, and reported by Dr. W. J. Heslop (*Med. Chron.*, Aug., 1888, p. 429), says that he wishes to show that while in many cases the act of suicide may be traceable to a deranged intellect, still there are instances not a few which cannot be explained in this manner, but which must be attributed to the firm deliberate purpose of the individual, the mind acting throughout in a perfectly rational and intelligent manner, and the will influenced by motives sufficiently cogent to impel to the fatal act. That suicide is often directly the result of insanity is so palpable as scarcely to require proof. Cases, the result either of the delirium of acute fever or of cerebral inflammation or of chronic morbid melancholia, indeed in melancholia the suicidal propensity is a symptom demanding the most unwearied watchfulness of the attendants. This suicidal impulse sometimes displays itself very suddenly without any apparent warning, whilst at other times it may assume the form of a delusion or hallucination which may haunt the unhappy victim for years. Dr. Reese does not believe that this suicidal impulse ever manifests itself suddenly, and for the first time, in a person of perfectly normal mental calibre, but thinks that if the history of the person be carefully traced, there will be discovered some evidence of antecedent latent mental aberration, either inherited or acquired. The suicidal impulse in case of melancholia is directly attributable to insanity. With regard to those cases of suicide, the result of a calm deliberate determination, based on sufficient motives and executed for a special purpose, Dr. Reese drew the attention of his hearers to the motive as an important factor in determining any alleged case of insanity. The motiveless character of a particular act is generally regarded as strong

evidence of a deficiency of mental capacity. The presence or absence of real motive is the pivot, so to speak, on which will hinge the decision as to whether any one act of suicide was or was not the result of insanity. When a man has been guilty of embezzlement for years and concealment is no longer possible, the crisis having arrived, the question will arise in his own mind, shall he wait for the punishment and consequent disgrace, or shall he save himself from the exposure by a swift and deliberate act of self-destruction. In the same category will be placed those cases of self-destruction following loss of honour, property, or employment, mortified pride, disappointed love or ambition, remorse, and other kindred causes. It is well known that in the highest civilisation of ancient Greece and Rome, the Stoic and Epicurean philosophy maintained not only the lawfulness of suicide, but openly taught that it was preferable to great pain and disgrace. Thus Zeno, the founder of the Stoics, hanged himself in his 98th year, rather than endure the pain and inconvenience of a dislocated joint. The generals Mithridates, Hannibal, Themistocles, Marc Antony, Brutus, and Cassius, all sought a similar death after being defeated in battle. Demosthenes, Cato of Utica, Seneca, and Cleopatra believed in suicide and practised it. Sacred history also affords us many examples of voluntary self-destruction in the persons of King Saul, Samson, and Judas. No one for a moment would think of ascribing any of the above instances to insanity. In modern times there have not been wanting persons of brilliant intellect who have openly advocated the desirableness of suicide, among whom may be mentioned Rousseau, Gibbon, Hume, Madame de Staël, Montaigne, and Montesquieu. It is to the Christian religion that we owe the effect of the radical change in the popular sentiment as regards suicide. At the present day this question of "the relation of suicide to insanity" most frequently presents itself in cases of life insurance, where there is a dispute about the payment of a policy to the heirs of the deceased on the ground of his alleged death by suicide. The question amounts to this—Did the deceased freely and intelligently intend to destroy himself?—i.e., with his mind at the time unswayed by insane delusions? The insane man equally with the sane one commits the act of self-destruction intentionally or knowingly, with the full purpose in view of terminating his existence, but he does not do it intelligently with his mind in its normal equipoise and "unswayed by an insane delusion."

A CASE OF POISONING WITH THE OIL OF GAULTHERIA.

The subject of this report (contributed by J. G. Pinkham, M.D., *Trans. Mass. Med.-Leg. Soc.*, 1887) was a young woman who had been married three weeks, and was three months advanced in pregnancy. On March 1st, at 9 p.m., she took, by advice of a friend, one ounce of the oil of gaultheria, for the purpose, as was supposed, of procuring an abortion. Soon after taking the drug she complained of a bad feeling in the head and of other unpleasant symptoms. At 11 p.m., a neighbour physician was called in. At this time, the prominent symptoms were—profuse perspiration, pain in the abdomen, frequent and painful micturition, and purging. Mustard was given as an emetic, with no result except the vomiting of a little white froth. Towards morning a convulsion occurred, after which the feet remained fixed in a state of flexion. At 7 a.m., March 2nd, Dr. C. A. Lovejoy was summoned to take charge of it. He found the patient tossing about in the bed, and apparently suffering from severe pain. She was totally insensible to light, and nearly so to sounds. The body was bathed in perspiration, face flushed, respiration rapid, pulse extremely feeble. Shortly after the doctor's arrival, a large amount of urine was passed involuntarily. The treatment was stimulating. At 10 a.m., the symptoms remained the same, except that the pulse was stronger. A short time before noon she again passed a large quantity of urine in bed. Death occurred, without return of consciousness, at 12 midnight, fifteen hours after the ingestion of the poison.

The autopsy was made at 10 a.m., March 3rd, twenty two hours after death, Drs. Lovejoy and Sheldon assisting. There was no rigor mortis, except a slight degree of it in the jaw and left knee. The feet were drawn into the position of talipes equinus. The fingers and toes were flexed, and the thumbs drawn into the palms of the hands; when these members were straightened, they resumed their flexed position at once after the extending force was removed. Corneæ hazy. Pupils half dilated. Buccal mucosa pale. The edge of the tongue appeared to have been bitten. Abdomen flat; recti relaxed. Breasts full; areolæ distinct; on pressure, a fluid like colostrum exuded.

On section of the body, the blood was found to be very black, and, with the exception of a few small clots in the large veins, to be everywhere fluid. The liver, spleen, and posterior portions of the lungs were engorged with black blood. Externally, and on section,

the kidneys appeared to be deeply congested, but otherwise healthy. The pericardial sac contained about two drachms of fluid. Heart healthy. The uterus was dark posteriorly near the fundus; it was enlarged to about the size attained at the end of the third month of gestation. The right ovary contained a corpus luteum of pregnancy. The mucous membrane of the stomach, and that of the duodenum for a distance of four inches from the pylorus, were intensely congested; below this point in the small intestines, the evidences of irritation gradually diminished. The contents of the stomach and intestines had a strong odour of checkerberry. The brain and all other organs examined were normal in structure.

To sum up the facts of this case, we have, as the result of taking one ounce of the oil of checkerberry, distress in the head, profuse perspiration, pain in the stomach and bowels, purging, diuresis, with frequent, painful, and at the last, involuntary micturition, abolition of sight and hearing, general convulsions, tonic spasms of the flexors of hands and feet, great depression of the heart's action, rapid respiration, and death in fifteen hours. *Post mortem*, we find persistent spasms of hands and feet, great irritation of the gastro-intestinal mucosa, a black, fluid state of the blood, and congested kidneys.

The oil of checkerberry (*Gaultheria procumbens*) is said to be composed of methyl-salicylate nine parts, and a hydrocarbon called gaultherilene, one part. I am not aware that these substances have been separately studied, but it is highly probable that the active properties of the drug are due to the methyl-salicylate, which is one of the series of methylic ethers, and would seem entitled, from this fact alone, to be ranked among the poisons. It may be obtained artificially by distilling a mixture of two parts crystallised salicylic acid, two parts of anhydrous wood spirit, and one part of oil of vitriol. When obtained in this way, it has the characteristic appearance and odour of the oil of checkerberry procured by distillation from the plant—a fact which would add still further to the probability that, in considering these cases of poisoning, methyl-salicylate is the substance with which we have to deal. Poisoning with the oil of checkerberry appears to have been rare. Beck* speaks of a fatal case that occurred in New York in 1832. Toxic effects have been known to follow large doses of an infusion prepared from the leaves of the plant. But, in the limited research which I have been able to make, I have found detailed reports of only three cases of poisoning with the oil.

* Medical Jurisprudence, Vol. II., p 942.

The first case was reported by Dr. Gallaher:^a A boy, aged nine, took a tablespoonful of the drug just before supper. Symptoms: early and persistent vomiting, purging, pain and tenderness in epigastric and hypochondriac regions, a hot skin, rapid pulse (125), slow, laborious, and loud respiration, inordinate appetite for food, thirst, increased pulsation of carotids, great dulness of hearing, a parched and swollen mouth. There was no delirium or stupor. The eyes were red, but the pupils remained natural. Recovery took place after small doses of calomel, blood-letting, and blisters over stomach and bowels.

The next case was reported by Dr. Allen M'Lane Hamilton.^b The patient was an adult female, and the amount taken was one half-ounce. The symptoms, as described by the doctor, who saw her an hour after she had taken the poison, were dizziness, drowsiness, marked delirium, pain in the head, noises in the ears, like the buzzing of bees, disturbed vision, hallucinations, left hemiparesis, a hot head, strong pulsation of temporal arteries and veins, contracted, then dilated pupils, cold extremities, rapid and laboured respiration, restlessness, salivation. There were no marked gastric or intestinal symptoms. The patient had a strong inclination to sleep, and could be kept awake only by slapping, the use of galvanism, &c. The case ended in recovery.

The third case was reported by Dr. Jewett.^c The patient was an intemperate man, aged fifty-five, who took by mistake, at 12 m., one half-ounce, as nearly as could be ascertained, of the oil. The symptoms, which began very soon, were—severe pain in the stomach and bowels, burning heat, intolerable thirst, vomiting and purging, perspiration, laboured respiration, gradually failing sight. The hearing remained unimpaired, and the mind clear until 4 45 p.m., when delirium set in, followed by complete unconsciousness at 5 p.m. As sight failed, things at first looked pale green, then dark green, then black. At 4 p.m., sight was lost. The case ended in death. This patient took, of his own accord, some infusion of tobacco to produce vomiting—a circumstance which doubtless modified the symptoms, and may have contributed to the fatal result.

These cases prove that the oil of gaultheria, when taken internally, is highly irritant to the gastro-intestinal mucous membrane, and that it exerts a powerful influence upon the nerve-centres. As

^a Philadelphia Medical Examiner, 1852, n. s. Vol. VIII., p. 347, et seq.

^b New York Medical Journal, 1875, Vol. XXI., p. 602-605.

^c New York Medical Gazette, 1867 & 1868, Vol. I, p. 330.

a poison, it must therefore be classed among the narcotico-irritants. As a remedy, it has been prescribed in rheumatism. The "National Dispensatory" and Wood's "Therapeutics" speak of the use of the plant as an emmenagogue. It is doubtless upon this theory of its action that its reputation as an abortifacient, like that of other aromatics, is based. It probably has no just claim to this distinction; but the oil certainly resembles the abortifacients in this, that when taken in decided doses, it is pretty sure to kill the mother. It is stated in the "United States Dispensatory" that the oil of gaultheria is sometimes adulterated with chloroform. If this is so, it is possible that some of the neurotic symptoms ascribed to it in the cases which have been reported may have been due to this impurity.

ANOMALOUS ARRANGEMENT OF THE LARGE VEINS OF THE NECK.

In making an examination of the body of the young coloured woman who was recently killed in Lynn, by a razor wound of the neck, Dr. Pinkham writes (*Trans. Mass. Med.-Leg. Soc.*, 1887):—An anomalous arrangement of the large veins of this region was discovered, which it seems worth the while to describe and place upon record. The cut began one inch in front of the angle of the jaw on the left side, and extended obliquely downwards and forwards a distance of two inches, to the top of the thyroid cartilage, thence parallel to the lower jaw on the right side, a distance of two-and-a-half inches. The structures divided were—the skin, the subcutaneous cervical muscle, the superficial layer of cervical fascia, and the sterno-hyoid muscles. The thyro-hyoid muscle of the right side and the thyroid cartilage were cut into. At the bottom of the wound on the right side, and far out, was seen a large vein partially severed and still bleeding. From its position, this was at first supposed to be the external jugular vein; but when followed upwards with a probe it was found to divide two main branches, one of which passed upwards and inwards to the region of the jugular foramen, and the other upwards and outwards to the front of the ear. Below, the main vein was found to dip beneath the sterno-cleido-mastoid muscle, and to join the subclavian, forming with it the innominate of that side. Further dissection revealed the carotid in its sheath with the pneumogastric nerve, in their usual positions, but with no vein accompanying them. It was therefore concluded that the internal jugular vein, in descending from its point of origin, had abandoned its place by

the side of the internal carotid, and turning outwards towards the surface, had joined the external jugular to form a common jugular, which from this point pursued a course downwards midway between the course of the external and that of the internal jugular, until it joined the subclavian. This common jugular, although loosely invested with fibres from the cervical fascia, was entirely outside and above the sheath of the carotid. In order to make sure of my conclusions, I followed the blood vessels upwards from the *vena cava descendens*, and laying them open verified every point. The arrangement on the left side was found to be the same as on the right, except that the vessel was smaller. As the cut was higher in the neck at this point it struck the vein in its most superficial position, and completely severed it. Had it not been for this unusual arrangement of the large veins, it is possible that the cut, severing as it would have done, only the external jugular, might not have caused death, or at any rate might have proved less speedily fatal. As it was, death occurred from hæmorrhage in about twenty minutes, as nearly as could be ascertained, after the infliction of the wound.

NERVOUS DISEASES DEPENDENT ON SPINAL CONCUSSION— "RAILWAY SPINE."

An address on the above subject was read by Dr. Oppenheim before the *Verein für innere Medicin*, on February 7th. The full title of the paper is, "How are those Affections of the Nervous System to be regarded which develop after Spinal Concussion, especially from Railway Accidents?" The author is Assistant Physician in the Nervous Diseases Department of the Charité Hospital, also Privat-Docent, and the following is a summary of the address (*Berliner klin. Wochenschr.*, No. 9, 1888), rendered into English by Dr. Edwardes.

Erichsen has given the symptomatology in its main features, but at that time all the attention of observers was directed to the spinal cord; hence the term "railway spine." Since then cerebral symptoms have come into the foreground, and we have now the "railway brain;" in other words, the old "traumatic meningo-myelitis" has been changed to "traumatic hysteria." The author would substitute for all this a new nosological conception.

Certain symptoms are common to all, or at least the majority of cases of nervous disease consequent on spinal concussion without external injury. These symptoms are chiefly psychic, and belong

to the affections, mental depression and irritability occupying the foreground. The mental depression is accompanied by anxiety of mind, the patient's thoughts being always occupied, even in his dreams, with the accident, but is distinguished from pure melancholia both by the abnormal irritability always present, even in persons previously remarkable for their phlegmatic indifference to external excitations, and by its hypochondriacal character. Severe intellectual disturbance is rare, but the author has seen a considerable degree of dementia with weakness of memory, also cases of hallucination, and even of traumatic insanity requiring seclusion. Giddiness and cramps, varying between "petit mal" and true epilepsy, are not infrequent; but care must be exercised in diagnosing such from purely hysterical attacks.

In the domain of the special senses, a mixture of hyperæsthesia and anæsthesia, or rather their juxtaposition, is the most frequent characteristic—*e.g.* hyperæsthetic zones are found within anæsthetic cutaneous areas; acuteness of vision is lowered, while the eye is extremely sensitive to light; the auditive faculty is lessened on the whole, while certain sounds react abnormally. Sensory anæsthesia is a very important subject, and observations have been made in Westphal's clinic with a view to distinguish genuine from simulated symptoms. The anæsthesia, *e.g.* of an extremity, does not usually follow the course of the nerve implicated, but is spread over neighbouring nerves, and is often overlooked. Typical girdle-feeling, and a corresponding anæsthetic zone, are rare. Pains are frequent, and usually of the dull kind, especially headaches. Reflex-excitability is more often lessened than increased. The tendons always react. Motility is almost always affected, the patients move about slowly, and without energy, the spine is maintained as fixed as possible; sometimes reflex muscular symptoms hinder locomotion. The various ways of walking are remarkable, and may excite suspicion of simulation. There is no doubt that the usual signs here do not, as a rule, correspond with those dependent on "material diseases" of the central nervous system. Where one foot drags, it is not carried as in hemiplegia. Tremor is frequent, but it resembles that of hysteria far more than that of sclerosis. Swaying on closure of the eyes is very frequent.

As to the motor cerebral nerves, the speech suffers most. There is no trace of aphasia here, or simple disturbance of articulation, or the speech of bulbar paralysis, or a scanning speech, but there are peculiar anomalies varying in the same patient, who may speak at

one time slowly and forgetfully, then impetuously. Interruptions of the speech by frequent respiration and acts of swallowing are common.

The vascular system is often influenced; this has been too usually overlooked. There is nervous palpitation and a sense of distress; the pulse is much quickened, and may reach 160, especially after any slight excitation; the heart beats strongly, and dilatation and hypertrophy may soon result, without any valvular lesion. There is increased irritability of the cardiac nervous system.

The general nutrition often suffers. Anorexia and constipation may be complained of, and (frequently) impotence.

The symptom which follow are rarer than the above—viz., vomiting, thirst, polyuria, a rise of temperature (rigors and fever were only observed twice). Bladder disturbance is more frequent, the patient having difficulty in passing urine, and the catheter may even be required. A difference between the pupils is frequent, so is slowness of pupillary reaction to light; but reflex rigidity of the pupils was seen in only five cases. In two cases optic atrophy existed.

The above enumeration is enough to show the difficulty of classification of these symptoms. Erichsen's view that a meningo-myelitis was set up in "railway-spine" cases was for a long time generally accepted. Leyden and Erb concurred in it, though they paid more attention to "shock" than Erichsen. Bernhardt took the same view, and Westphal compared some cases to disseminated sclerosis. The psychical anomalies were strangely neglected, even after the doctrine of "traumatic insanity" sprang up. Rigler only went so far as to give a special name to one particular frame of mind—"siderodromophobie" (railway dread). Moeli, in 1881, first rejected the term "railway spine" as insufficient to designate such psychoses as those enumerated; also Walton and Putnam warmly contended that the brain, not the spine, was chiefly affected.

The modern or French view of Charcot and his disciples is that in all such cases there is hysteria and nothing else. The anæsthesiæ were of the kind so common in hysteria. Moreover, hysterical paralysis could be easily induced by hypnosis, exactly like that so common after accidents. Charcot's observations on neuralgia, hysteria, and psychic paralysis are extremely valuable, but his theory is too absolute. The symptoms after railway and similar accidents are not pure psychoses nor pure neuroses, but a "symptom-complex" of the elements of these variously mingled. The essential symptoms indicate a cerebral basis, though it is not denied

that a local spinal injury may form the starting-point (reflex-neurosis). The term "railway spine" must be rejected for the majority of cases. This term must not be replaced by the narrow conception "traumatic hysteria," or, as Page would have it, "traumatic neurasthenia," but by the term "traumatic neurosis" (railway accident neurosis), or "traumatic neuropsychosis." Of course, such symptoms as severe bladder disturbances, reflex pupil-rigidity, and especially optic atrophy, are not to be regarded as purely functional nervous affections; but these symptoms are not common.

It cannot be denied that mere fright, "psychic shock," has set up the various psychoses in many cases, but then there are undoubted observations of disseminated sclerosis due to shock. On the other hand, the bodily shaking must go for something in the causation of the symptoms.

"It is consistent with my view of railway accident cases," says the author, "that they always get worse while any legal suits are pending, but improve to a certain extent at once when these are ended, though Rigler argued that this was a proof of simulation. Can we wonder that anxiety about the means of living, and fear of want and degradation, act detrimentally on such morbid psychic conditions?" Even when substantial damages are accorded, the cases which the author was able to follow, never got well. The prognosis "*quoad sanationem*" is unfavourable. Most of the author's patients were hospital patients, and very few were previously "nervous." Alcoholic subjects may be difficult to diagnose, because alcohol may profoundly disturb the nervous system.

Long observation of railway cases, preferably in hospital, is necessary before a sound judgment can be made, and simulation eliminated, but the author states that, in the cases he has been able to follow up, he had never been deceived on this point. Finally, the above-enumerated symptoms have been repeatedly observed after other than railway accidents, when compensation has never entered into the question.

SPONTANEOUS EXPULSION OF A LARYNGEAL POLYPUS.

At a meeting of L'Association Française pour l'Avancement des Sciences, Dr. J. Charazac gave the history of a woman, aged thirty-one years, who had long been suffering from a laryngeal polypus, which she expelled during a violent fit of coughing.—*Journal des Sociétés Scientifiques*, 12th October, 1887.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—ROBERT M'DONNELL, M.D., F.R.S.

General Secretary—W. THOMSON, M.D.

SECTION OF MEDICINE.

President—JAMES LITTLE, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, May 18, 1888.

DR. ARTHUR WYNNE FOOT in the Chair.

Case of Typhoid Fever Relapse.

The SECRETARY, on behalf of MR. C. H. ROBINSON, read notes of a case of typhoid fever with a double relapse. The boy who was the subject of this communication was aged fourteen years. The primary fever lasted about twenty-two days, then there was an apyrexial period of two days, succeeded by a relapse of thirty-three days, then a second apyrexial period of twenty-two days, and, lastly, a second relapse lasting thirty-nine days. There were no complications, the disease running its own course. Contrary to the usual rule, the second relapse lasted longer than the first, and the first relapse longer than the primary fever. The highest temperature during the primary attack was $104\cdot5^{\circ}$ Fahr., in the first relapse $103\cdot5^{\circ}$, and in the second relapse it was 105° . During the second relapse there was a typhoid eruption. The patient ultimately made a good recovery.

The CHAIRMAN regretted the absence of the author of the paper, as precluding a reply or explanation following the discussion, and observed that to establish the fact of a relapse in typhoid fever, the temperature should have been kept twice daily during the so-called apyrexial periods, of which two were given—one being of two days' and the other of

twenty-two days' duration; but in neither had the temperature been regularly recorded.

DR. WILLIAM MOORE concurred, adding that it was impossible, without keeping the chart regularly, to draw decided conclusions as to a relapse, the temperature varying a degree or a degree and a half from one day to another. Moreover, two days should be considered a very short period, and twenty-two a very long one. He would look for a relapse at the end of eight or ten. The communication was defective in not giving a record of the exact temperature at least twice in the twenty-four hours.

DR. WRIGHT instanced cases in his own practice in which he found the temperature normal in the morning and in the evening it was a degree or a degree and a half up, rising sometimes to 100°. He had had cases also of high temperature in the early stages of typhoid, and at the termination it was considerably below normal.

DR. MACSWINEY had no doubt that, while true relapse occurred, yet there were cases where exacerbations of fever and diminutions had been mistaken for relapse; but, assuming, as they were bound to do, that Mr. Robinson had satisfied himself on the point, a practical question arose for discussion—namely, the probable cause of the relapse, whether it was either resident in the constitution, as from scrofula, or was due to negligence, particularly in respect of dietetic treatment. There were, however, no details of the treatment.

DR. GRIMSHAW considered there was evidence of only one relapse. There was no proof either that the temperature continued normal during the twenty-two days. The case was reduced to the less uncommon form of one relapse.

DRS. FITZPATRICK and DOYLE also joined in the discussion.

Foreign Body in the Air Passages.

MR. PAUL R. DILLON read notes of a case of foreign body in the air passage.

The CHAIRMAN said the question arose whether or not the fragment of bone was originally in the air passages. He had at first thought that a foreign body could not remain so long in the air passages without giving rise to objective symptoms, and that it had entered the œsophagus and got into the neighbourhood of the thyroid gland and thence into the air passages for the first time.

DR. MACSWINEY had no doubt that the bone was held in the air passages, and that the respiratory movement carried the bone with the soup into the air passages. All the violent bronchial irritation pointed to the extensive irritation caused by the presence of the bone. One of the most remarkable features of the case was the setting up of a true goitre. Though Mr. Dillon had made a careful dissection of the nerve-supply, he

had not shown how the nerve-supply set up the goitre. There might, no doubt, be some circulatory nerve disturbance, induced by the irritation and coughing, and possibly, with a history of non-menstruation, the woman might not have been free from uterine or hysterical disturbance: or there might be some connection between the goitre and the supposed cause of the enlargement of the thyroid gland in Graves' disease.

DR. GRIMSHAW remembered a traditional case which his father told him of as having occurred some seventy years ago, whilst he was pupil of the grandfather of the President of the Academy, Dr. M'Donnell. A woman, eating a fish dinner, choked over a bone, which stuck in her throat, but though respiration was not interfered with she was in great pain, and was received into the General Hospital, Belfast, where Dr. M'Donnell attempted to dislodge it. The bone would not move at the time, but eventually it disappeared. The patient did not lose the pain, and got worse, suffering from difficulty of swallowing, and afterwards symptoms arose resembling phthisis. This was one of the first cases in which the stethoscope was used in this country. Ultimately the piece of bone was coughed up, the symptoms of suppurative disease in the lung disappeared, and the patient recovered.

DRS. WILLIAM MOORE, CRANNY, and DOYLE also took part in the discussion.

MR. DILLON, in reply, said the total absence of dysphagia disproved the suggestion that the foreign body was not in the air passages. In his case there were no symptoms of phthisis. He could not conceive how the foreign body would block up the bronchus without occluding the entrance of air into the lung on that side.

The section adjourned.

SALOL IN DIARRHŒA.

DR. O. T. OSBORNE, New Haven, Conn. (*New York Medical Journal*, April 7, 1888), has used salol or salicylate of phenol—or Salicylsäurephenyläther, as Bielschowski, of Breslau, named it—with success in many cases of diarrhœa. For a child of two years he gives .05 gramme; from two to five years, .1 gramme; five to twelve years, .2 gramme; and above twelve years, .3 gramme. The indications for the use of salol are vomiting, purging, and cramps. Dr. Osborne finds it useful in the summer diarrhœa of children, and even in cases of prolonged diarrhœa.

PRURITUS ANL

DR. JOHNSON (*Montpellier Médical*) recommends the following lotion:—R. Sodii hyposulphitis, 15 grms.; acidi carbol., 2 grms. 50 c.g.; glycerini, 8 grammes; aquæ destil., 120 grms.—ft. lotio.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1887-88.

President—ROBERT ESLER, M.D.

Hon. Secretary—JOHN M'CRAW, M.D.

Two Cases of Ovariectomy. By ALEXANDER DEMPSEY, M.D., L.R.C.S.I.; Physician for Diseases of Women, Mater Infirmorum Hospital, Belfast.

CASE I.—M. G., aged twenty-six, unmarried, mill-worker, thin and wiry looking, was admitted into the Mater Hospital, on the 10th of May, 1887. The usual signs of ovarion dropsy were present. Fluctuation was distinct and universal. The left lumbar region was dull on percussion, and the tumour at this region felt more or less solid. The right flank was tympanitic. The patient remarked the tumour for the first time about twelve months ago. It was then as high as the umbilicus, and in the centre of the abdomen. She never suffered any pain since its appearance, and the abdominal wall moved freely over it. The cyst was diagnosed as multilocular and non-adherent. The menses were regular and normal. She was put upon a mixture of tr. ferri perchlor. with an occasional purgative preparatory to operation.

The operation was performed on the 10th of June under chloroform, kept up with methylene. No spray was used, but, otherwise, strict antiseptic precautions were taken.

The abdominal incision was four inches, and all hæmorrhage was arrested before opening the peritoneum. The cyst contained 14 pints of fluid. It was bilocular. The second cyst was opened by introducing my hand into the first and rupturing the septum with my finger.

There were no adhesions whatever.

The pedicle was long and slender, and was ligatured with strong silk, previously boiled in carbolic solution.

The cyst was connected with the left ovary. The wound was brought together by four deep and two superficial sutures without any previous sponging or toilet of the peritoneum being performed, and dry antiseptic dressings were used.

She suffered from sickness of the stomach for 28 hours, and during that time was fed on milk and egg and beef-tea enemata, with an occasional small dose of laudanum added.

The urine was drawn off three times at intervals of six hours; after that she passed urine without aid.

The dressing was changed on the seventh day. The inside layer of carbolic gauze was stained with sanious discharge, and there were some drops of pus at the lower part of the wound where union was not perfect. This was due to the presence of a small piece of peritoneum, which had been allowed to protrude between the edges of the wound. I removed six sutures from the united portion of the wound and left two in the small ununited portion. Two days afterwards these two were removed.

The temperature for the 1st seven days ranged between 98·8° and 100·5°. On the evening of the first dressing it rose from 98·8° to 101·5°, and on the ninth day after the operation it was 102°.

I applied the ice cap and cold clothes on the arms, and gave 16 grains of quinine. On June 20th, the tenth day, it was 98·8°.

The bowels acted naturally on the sixth day after operation, and again on the ninth day after an olive oil enema.

She was up on the seventeenth day, and was discharged from hospital about ten days afterwards in good health.

CASE II.—Mrs. M. C., widow, aged thirty-eight, mother of seven children, youngest seven years of age, a very tall woman, was admitted into the Mater Hospital on the 20th of October, with an ovarian tumour.

She first remarked the swelling two years ago. It was then in the centre of the abdomen, and it increased steadily and gradually.

The menses came at shorter intervals and were more profuse. Latterly she suffered from pains in the abdomen, attended by slight fever. For a month before admission, on account of these attacks of pain, she became practically unfit for her duty, which was that of Matron in the Belfast Prison.

The usual signs of ovarian dropsy were present. The girth at the umbilicus was 46 inches.

At some points over the tumour there was considerable tenderness on pressure. And this fact, in conjunction with the pains and feverish attacks she suffered from, which were evidently due to subacute peritonitis, made the presence of adhesions more than probable, while it necessitated some preparatory treatment before operation. Under treatment her general health improved, and she became more hopeful and resigned.

The operation was performed on the 9th of November, under chloroform. The abdominal incision was about four inches. The cyst contained 16 pints of dark thick gelatinous fluid, which flowed very slowly through the canula. It was generally adherent, but with the exception of one or two bands, the adhesions were soft and easily broken down.

It was multilocular. There were four or five distinct cysts.

The pedicle was ligatured by the Staffordshire knot.

No toilet of the peritoneum was performed. The abdominal wound was united by six deep and two superficial sutures.

Dry dressing of iodoform gauze and salicylic wool and a bandage were applied.

Modified antiseptics were employed.

There was no collapse after the operation. She vomited only once, but for that day and night she was fed by nutrient enemata, with a little toast-water for a drink.

The catheter was used when required.

The temperature ranged between 98.5° and 99.8° during the first eight days, when, after dressing for the first time, it rose to 100.8° , but fell next day, and was at normal on the tenth day after the operation and did not again rise.

The dressings were changed on the 16th of November, eight days after operation. The inner layer of gauze was slightly stained, but dry. The wound was perfectly united, and not a drop of pus was present.

All the stitches were removed and similar dressings again employed, supported by strips of plaster.

She was again dressed on the 22nd of November, and was allowed to get up on the couch the same day, the fourteenth after operation.

She left hospital for her own home in Longford on the 1st of December, the 23rd day after operation, and she returned to duty in the Prison on the 5th of January, in good health, and without any complaint.

She met with an accident going home, which, fortunately, was unattended with any serious result. She had some miles of a drive on an outside-car from the Railway Station, and when nearing home the horse took fright at some object on the road, and ran off, she was pitched from the car into the ditch, but, with the exception of slight soreness from the fall, she was otherwise uninjured.

TETANUS SUCCESSFULLY TREATED WITH COCAIN.

DR. MANUEL LOPEZ (*El Genio Medico-Quirurgico*) reports the successful treatment of a case of tetanus, in a man fifty years old, by hypodermic injections of a solution containing 5 per cent. each of cocaine and morphin. Ten minims of the solution were used in each injection. After the second dose the spasm sensibly diminished and the pain became less severe. Prior to the use of the cocaine, morphin, chloral and morphin, tobacco, belladonna, and mercury had been tried without benefit.—*La Voz de Hipocrates*, No. 235.

SANITARY AND METEOROLOGICAL NOTES

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VITAL STATISTICS

For four Weeks ending Saturday, September 8, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Aug. 18.	Aug. 25.	Sept. 1.	Sept. 8.		Aug. 18.	Aug. 25.	Sept. 1.	Sept. 8.
Armagh -	5.2	20.7	10.3	41.3	Limerick -	16.2	24.3	17.5	17.5
Belfast -	16.1	17.0	19.3	16.5	Lisburn -	4.8	4.8	9.7	14.5
Cork -	20.8	16.9	17.5	17.5	Londonderry	12.5	8.9	8.9	12.5
Drogheda	12.7	25.4	4.2	25.4	Lurgan -	10.3	5.1	10.3	20.5
Dublin -	18.0	17.7	19.8	21.3	Newry -	7.0	14.0	14.0	17.6
Dundalk -	8.7	21.8	4.4	30.6	Sligo -	24.1	24.1	9.6	14.4
Galway -	20.2	23.5	3.4	20.2	Waterford -	25.5	13.9	2.3	16.2
Kilkenny	12.7	16.9	8.5	38.1	Wexford -	21.4	29.9	21.4	21.4

In the week ending Saturday, August 18, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 16.2), was equal to an average annual death-rate of 16.4 per 1,000 persons living. In Glasgow the rate was 20.1; and in Edinburgh it was 15.2.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 17.0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1.5 per 1,000, the rates varying from 0.0 in eight of the districts to 8.7 in Dundalk—the 2 deaths registered in that district were both from whooping-cough. Among the 70 deaths from all causes registered in Belfast are 1 each from measles, enteric fever, and diarrhœa. The 12 deaths in Limerick comprise 1 from

scarlatina and 1 from diarrhoea, and the 11 deaths in Waterford comprise 1 each from typhus and enteric fever.

In the Dublin Registration District the births registered during the week amounted to 188—93 boys and 95 girls—and the deaths to 128—57 males and 66 females.

The deaths represent an annual rate of mortality of 18·2 in every 1,000 of the estimated population—omitting one death (1) of a person admitted into a public institution from a locality outside the district, the rate was 18·0 per 1,000.

Fourteen deaths from zymotic diseases were registered, being 22 below the average for the corresponding week of the last ten years, and 1 under the number for the week ended August 11. The 14 deaths comprise 1 from scarlet fever (scarlatina), 1 from typhus, 3 from whooping-cough, 1 from diphtheria, 2 from enteric fever, 5 from diarrhoea, &c.

Four cases of scarlatina were admitted to hospital, being 1 over the admissions for the preceding week. Four scarlatina patients were discharged, 1 died, and 35 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

Two cases of typhus and 7 of enteric fever were admitted to hospital, against an equal number of the former and 3 of the latter disease admitted during the preceding week. Six cases of typhus and 26 of enteric fever remained under treatment in hospital on Saturday.

Thirteen deaths from diseases of the respiratory system were registered, being 7 under the average for the corresponding week of the last ten years, and equal to the number for the week ended August 11. They comprise 7 from bronchitis, and 4 from pneumonia or inflammation of the lungs.

In the week ending Saturday, August 25, the mortality in twenty-eight large English towns, including London (in which the rate was 17·6), was equal to an average annual death-rate of 18·1 per 1,000 persons living. In Glasgow the rate was 18·8; and in Edinburgh it was 14·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 17·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in six of the districts to 14·4 in Sligo—the 5 deaths from all causes registered in that district comprising 1 from measles and 2 from diarrhoea. Among the 74 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from whooping-cough, 5 from diphtheria, and 4 from diarrhoea. Among the 18 deaths for Limerick are 1 from scarlatina and 1 from diarrhoea. The 4 deaths for Newry comprise 1 from scarlatina. Of the 7 deaths for Wexford 1 was from whooping-cough. The 5 deaths

from Dundalk comprise 1 from enteric fever, and among the 4 deaths for Armagh are 1 from whooping-cough and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 209—114 boys and 95 girls—and the deaths to 121—62 males and 59 females.

The deaths represent an annual rate of mortality of 17·9 in every 1,000 of the estimated population—omitting one death (1) of a person admitted into a public institution from a locality outside the district, the rate was 17·7 per 1,000.

Twelve deaths from zymotic diseases were registered, being 22 below the average for the corresponding week of the last ten years, and 2 under the number for the week ended August 18. They comprise 3 from measles, 1 from scarlet fever (scarlatina), 2 from enteric fever, 4 from diarrhoea, &c.

Nine cases of scarlatina were admitted to hospital, being 5 over the admissions for the preceding week. Five scarlatina patients were discharged during the week, and 39 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

Three cases of typhus and 5 of enteric fever were admitted to hospital, against 2 of the former and 7 of the latter disease admitted during the preceding week. Eight cases of typhus and 27 of enteric fever remained under treatment in hospital on Saturday.

Fifteen deaths from diseases of the respiratory system were registered, being 4 under the average for the corresponding week of the last ten years, but 2 over the number for the week ended August 18. They comprise 10 from bronchitis, and 2 from pneumonia or inflammation of the lungs.

In the week ending Saturday, September 1, the mortality in twenty-eight large English towns, including London (in which the rate was 16·4), was equal to an average annual death-rate of 17·5 per 1,000 persons living. In Glasgow the rate was 17·4; and in Edinburgh it was 15·0.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 17·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in eleven of the districts to 5·1 in Lurgan—the 2 deaths from all causes registered for that district comprising 1 from whooping-cough. Among the 84 deaths from all causes registered in Belfast are 2 from enteric fever and 7 from diarrhoea; and the 13 deaths in Limerick comprise 1 from scarlatina, 1 from typhus, and 1 from diarrhoea.

In the Dublin Registration District the births registered during the

week amounted to 157—84 boys and 73 girls—and the deaths to 138—75 males and 63 females.

The deaths represent an annual rate of mortality of 20·4 in every 1,000 of the estimated population—omitting the deaths (4) of persons admitted into public institutions from localities outside the district, the rate was 19·8 per 1,000.

Nineteen deaths from zymotic diseases were registered, being 21 under the average for the corresponding week of the last ten years, but 7 over the number for the week ended August 25. They consist of 2 (both in one house) from scarlet fever (scarlatina), 1 from typhus, 2 from whooping-cough, 1 from ill-defined fever, 6 from enteric fever, and 7 (including 5 deaths of infants under one year old) from diarrhoea.

There were no admissions into hospital of scarlatina patients during the week. Eleven patients were discharged, and 28 remained under treatment on Saturday, being 11 under the number in hospital at the close of the preceding week.

Three cases of typhus and 4 of enteric fever were admitted to hospital, against 3 cases of the former and 5 of the latter disease admitted during the preceding week. Nine cases of typhus and 24 of enteric fever remained under treatment in hospital on Saturday.

Twenty-two deaths from diseases of the respiratory system were registered, being 1 over the average for the 35th week of the last ten years, and 7 over the number for the week ended August 25. They comprise 13 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, September 8, the mortality in twenty eight large English towns, including London (in which the rate was 16·0) was equal to an average annual death rate of 17·8 per 1,000 persons living. In Glasgow the rate was 18·5; and in Edinburgh it was 16·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in eight of the districts to 5·1 in Lurgan—the 4 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 72 deaths from all causes registered in Belfast are 1 from diphtheria, 2 from enteric fever, and 6 from diarrhoea; and the 7 deaths in Dundalk comprise 1 from scarlatina.

In the Dublin Registration District the births registered during the week amounted to 180—83 boys and 97 girls—and the deaths to 147—68 males and 79 females.

The deaths represent an annual rate of mortality of 21·7 in every 1,000 of the estimated population—omitting the deaths (3) of persons

admitted into public institutions from localities outside the district, the rate was 21·3 per 1,000.

Twenty-five deaths from zymotic diseases were registered, being 6 over the number for the preceding week, but 16 under the average for the thirty-sixth week of the last ten years. They comprise 1 from measles, 2 from scarlet fever (scarlatina), 2 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 2 from enteric fever, 11 (including nine deaths of children under five years old) from diarrhoea, 1 from dysentery, &c.

During the week ended August 25, 9 cases of scarlatina were admitted to hospital; in the following week no cases of the disease were received, but during this week there were 7 admissions. Eleven scarlatina patients were discharged in the course of the week, 1 died, and 23 remained under treatment on Saturday, being 5 under the number in hospital on Saturday-September 1.

Seven cases of enteric fever were admitted, against 4 for the preceding week, but the admissions for the week do not comprise any case of typhus. Twenty-six cases of enteric fever and 8 of typhus remained under treatment in hospital on Saturday.

Only 14 deaths from diseases of the respiratory system were registered, being 7 below the average for the corresponding week of the last ten years, and 8 under the number for the week ended September 1. The 14 deaths consist of 6 from bronchitis, 5 from pneumonia or inflammation of the lungs, 2 from croup, and 1 from pleurisy.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.,
Long. 6° 15' W., for the Month of August, 1888.*

Mean Height of Barometer,	-	-	-	29·957 inches.
Maximal Height of Barometer (on 31st, at 9 p.m.),				30·350 "
Minimal Height of Barometer (on 23rd, at 9 p.m.),				29·389 "
Mean Dry-bulb Temperature,	-	-	-	57·6°.
Mean Wet-bulb Temperature,	-	-	-	55·0°.
Mean Dew-point Temperature,	-	-	-	52·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·398 inch.
Mean Humidity,	-	-	-	83·6 per cent.
Highest Temperature in Shade (on 7th),	-	-	-	71·4°.
Lowest Temperature in Shade (on 18th),	-	-	-	42·0°.
Lowest Temperature on Grass (Radiation) (on 18th),				36·2°.
Mean Amount of Cloud,	-	-	-	53·6 per cent.
Rainfall (on 12 days),	-	-	-	1·270 inches.
Greatest Daily Rainfall (on 21st),	-	-	-	·231 inch.
General Directions of Wind,	-	-	-	S.W., S., W.

Remarks.

As in 1887, so in 1888, August proved to be rather cool, very breezy, and showery. On the whole, conditions were more favourable in Dublin than in many parts of the country.

In Dublin the mean temperature (58.2°) was decidedly below the average (59.8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 57.6° . In the twenty-three years ending with 1887, August was coldest in 1881 (M. T. = 57.0°), and warmest in 1871 (M. T. = 62.0°). In 1885, the M. T. was only 57.1° ; in 1879 (the "cold year"), it was 57.7° ; in 1887, it was 60.3° .

The mean height of the barometer was 29.957 inches, or 0.053 inch above the average value for August—namely, 29.904 inches. The mercury marked 30.350 inches at 9 p.m. of the 31st, and fell to 29.389 inches at 9 p.m. of the 23rd. The observed range of atmospherical pressure was, therefore, 0.961 of an inch—that is, a little less than an inch. The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 57.6° , or 1.0° above the value for July, 1888; that calculated by Kaemtz's formula—viz., $\text{min.} + (\text{max.} - \text{min.} \times .41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 57.0° , or 1.9° below the average mean temperature for August, calculated in the same way, in the twenty years, 1865–84, inclusive (58.9°). The arithmetical mean of the maximal and minimal readings was 58.2° , compared with a twenty-three years' average of 59.8° . On the 7th the thermometer in the screen rose to 71.4° —wind S.W.; on the 18th the temperature fell to 42.0° —wind S.E. The minimum on the grass was 36.2° on the latter date. The rainfall was 1.270 inches, distributed over 12 days. The average rainfall for August in the twenty-three years, 1865–87, inclusive, was 2.766 inches, and the average number of rainy days was 15.3. The rainfall, therefore, was considerably below the average, and so were the rainy days. In 1874 the rainfall in August was very large—4.946 inches on 18 days—and in 1868, 4.745 inches fell on however only 13 days. On the other hand, in 1884, only .777 inch was measured on 8 days. In 1887, 1.520 inches of rain fell on 16 days.

A solar halo appeared on the 18th. High winds were noted on as many as 10 days, but did not attain the force of a gale on any one occasion. The atmosphere was foggy on the 10th. Thunder was heard on the 21st. Hail fell in heavy showers on the 29th. Temperature reached or exceeded 70° in the screen on only one day—or 9 fewer than in August, 1887.

The month opened with a fair promise, and fine weather prevailed until Saturday, the 4th, on which day a depression, growing rapidly deeper, passed from Scotland across the North Sea, causing rain and squalls.

The weather of the week ending Saturday, the 11th, was finer and drier than had been the case for a long time before, and over England temperature rose to a high level for the time of year—maxima exceeding 80° being registered over the midland and south-eastern counties on Thursday and Friday, the 9th and 10th. In London and at Cambridge the thermometer reached 85° during this warm period. In Dublin the mean height of the barometer was 30·049 inches—pressure ranging from 30·202 inches at 9 p.m. of Sunday, the 5th, to 29·919 inches, at 9 p.m. of Saturday, the 11th. The mean temperature deduced from readings of the dry-bulb thermometer, taken daily at 9 a.m. and 9 p.m., was $59\cdot9^{\circ}$; that deduced from the maximal and minimal daily temperatures was $60\cdot9^{\circ}$. The thermometer rose to $71\cdot4^{\circ}$ in the shade on Tuesday, having fallen to $46\cdot8^{\circ}$ on Sunday. Rain fell on two days—the total measurement being ·262 of an inch, of which ·218 of an inch was registered on Sunday.

The week ending Saturday, the 18th, was a period of fine weather—conditions were generally favourable, except on Sunday and Monday, when a rather deep depression was passing in a north-easterly direction across Ireland and Scotland, accompanied by showers and squalls. As this disturbance passed away, the sky cleared, and quiet, bright weather was experienced with a much lower temperature, particularly at night. In France and the south of England it was not so fine as in Ireland and Scotland, owing to the approach of some shallow depressions from the Peninsula. The wind was at first N.W., afterwards it settled in the N.E. and E. points of the compass. In Dublin the mean height of the barometer was 30·110 inches, the readings varying from 29·481 inches at 9 p.m. of Sunday to 30·314 inches at 9 a.m. of Saturday. The mean temperature, deduced from readings of the dry-bulb thermometer taken daily at 9 a.m. and 9 p.m., was $55\cdot9^{\circ}$; that deduced from the maximal and minimal daily temperatures was $56\cdot0^{\circ}$. The thermometer in the shade rose to $68\cdot6^{\circ}$ on Sunday and fell to $42\cdot0^{\circ}$ on Saturday. Rain fell on only one day—Sunday—in appreciable amount, the measurement being ·051 inch.

Although moderately warm, the weather was generally unsettled during the week ending Saturday, the 25th, and rain fell frequently and in many places heavily. The wind was chiefly southerly—on Sunday and Thursday it blew freshly in squalls. Sunday was dull and rainy. On Tuesday heavy thunder showers fell in the afternoon. On Thursday the wind freshened to a stiff breeze from S., and close rain fell for some time in and about Dublin. Friday and Saturday were fine, warm days. On Tuesday heavy thunderstorms and rains occurred over the southern half of France. In Dublin the mean height of the barometer was only 29·683 inches, or ·426 inch below the corresponding value for the previous week (30·109 inches). Pressure was highest at 9 a.m. of Sunday (30·083

inches), and lowest at 9 p.m. of Thursday (29·389 inches). The mean temperature, deduced from readings of the dry-bulb thermometer taken daily at 9 a.m. and 9 p.m., was 59·3°; that deduced from the maximal and minimal daily temperatures was 59·8°. The screened thermometers rose to 67·0° on Friday and fell to 50·1° on Sunday. Rain was measured on four days, the total precipitation being ·499 inch. Of this amount ·231 inch fell on Tuesday, and ·228 inch on Sunday.

The closing period of the month from Sunday, the 26th, to Friday, the 31st, was chiefly variable, showery, and decidedly cool for the time of year. The month closed, however, as it had opened, with a high barometer and quiet, fine weather. On Tuesday, the 28th, a secondary depression, which grew much deeper as it moved, travelled across England from the south of Wales to Lincolnshire. It caused fresh gales and heavy rains with thunder all over England; in Ireland drenching showers of rain and in places hail. As this disturbance passed off, the barometer rose quickly to the maximum for the month, 30·350 inches, at 9 p.m. of Friday, the 31st, while the wind drew towards N. with cool, dry weather.

The rainfall in Dublin during the eight months ending August 31st has amounted to 17·264 inches on 121 days, compared with 9·455 inches on 96 days during the same period in 1887, and a twenty-three years' average of 17·515 inches, on 128·1 days.

At Greystones, Co. Wicklow, the rainfall in August, 1888, was 1·53 inches, distributed over 11 days. Of this quantity, ·37 inch fell on the 19th, ·34 inch on the 23rd, and ·18 inch on the 2nd. Since January 1, 20·96 inches of rain have fallen at Greystones, on, however, only 86 days.

PERISCOPE.

TOXIC SYMPTOMS FROM ANTIPYRIN.

SEVERAL writers have recently drawn attention to this subject. At a meeting of the Société de Therapeutique, on the 14th of March, 1888, Dr. Mayrt reported a case in which a copious rash followed two days after a three-gramme dose of antipyrin. In the discussion that followed M. Rougon told of a similar case.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, March 23, 1888. In the same journal Dr. Giguel reports a case of rheumatism, occurring in an adult—a woman of nervous temperament—for whom he prescribed antipyrin in 15-grain doses, one to be taken three times in the twenty-four hours. Ten minutes after the first dose was taken the patient experienced sensations of great irritation about the upper and lower jaws, sneezing followed, and persisted for a quarter of an hour. A sensation of pricking was felt at the thyroid cartilage, and the voice became hoarse and rough; the temples throbbed,

and the nares were occluded by mucus. The painful shoulder, however, was free from pain, and could be moved freely. Five hours after the drug was taken only a slight roughness of the voice remained. A second dose of four grains was followed by the same effect, at the same time, in less degree. During the effect of the drug the side of the head and neck were intensely congested.

INTUBATION OF THE LARYNX.

DR. J. W. PINKHAM publishes, in the *New York Medical Journal*, March 17, 1888, a history of ten cases in which he practised intubation of the larynx, chiefly for diphtheritic laryngitis. Two cases recovered; one, a girl five years old, wore the tube for six days; the other, a boy two and a half years old, wore the tube seven days and seven hours. Another child was cured of the croup, but died six days after the removal of the tube of broncho-pneumonia, with marked cerebral symptoms.

POST PARTUM HÆMORRHAGE.

AMONGST the methods of treatment recommended by Dr. Wm. Blackstone (*American Practitioner and News*, March 31, 1888) for *post partum* hæmorrhage is injection of cold water through the umbilical vein of the cord. By this process the placenta is distended, and as the water trickles through into the cavity of the uterus, contractions are induced and the placenta is expelled. This method is now practised very extensively in the German schools.

PULMONARY TUBERCLE.

DR. M. V. FRAENTZEL (*Deutsche med. Wochens.*, No. 14) recommends the following prescription, which, in 150 out of 400 cases of pulmonary tubercle, gave distinct benefit:—R. Creasoti, 13 grammes; R. gentiani, 30 grammes; spt. vini Gallici, 250 grammes; vini Xerici, 1,000 grammes. M. ft. mist. One tablespoonful of this mixture two or three times a day in a wine-glass of water, and at the same time continue to take cod-liver oil.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 37.

PITYRIASIS.

THE following prescription is recommended as a lotion for pityriasis by Dr. H. Gueneau de Mussy:—R. Ammon. chloridi, 60 centigrammes. Glycerini, 30 grammes. Aquæ rosæ, 125 grammes. D. Ft. lotio.—*L'Union Médicale* (No. 50).

TINNITUS AURIUM.

THE distressing ear symptoms produced by the administration of quinine or salicylate of sodium are counteracted by the addition of small doses of ergot to the mixture.—*The Medical Herald*, Louisville, Ky., No. 93.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

NOVEMBER 1, 1888.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XIX.—*On Tubercle Bacillus.* By CHARLES EDWARD MACNAMARA, M.K.Q.C.P.I.; L.R.C.S.I.; Diplomate in State Medicine, K.Q.C.P.I.; Colonial Surgeon, British Guiana.

I FEEL that at the present moment hardly any apology is necessary for bringing under consideration such a subject as one that touches upon the life-history of the tubercle bacillus. I am led to such confidence, not from any feeling of my own ability exhaustively to treat of this great question, but from a hope of arousing some interest regarding it which may tend to advance the question generally.

The leading theories as regards this bacillus may be, so far as my knowledge goes, summarised briefly as follows:—

1. The *hereditary* theory, wherein it is assumed by such authorities as Baumgarten and others, and almost countenanced by the recent remarks of Dr. Troup, that the germ of the bacillus is like that of syphilis, directly transmissible from parent to offspring.

2. The *diathesis* theory—if I may so call it—as propounded many years ago by Virchow, and lately supported by Koch, and likewise having a large majority of influential supporters—the theory being that phthisis itself is in no way transmitted by inheritance, but that the tendency to it may be so transmitted—i.e., that the diathesis is bequeathed from parent to offspring.

3. We have the theory of *infection*, wherein it is maintained that the bacillus, as in zymotic diseases generally, may be trans-

mitted contemporaneously from one individual to another. Dr. C. T. Williams, in one of his lectures, said: "In ordinary phthisis the bacilli are supposed to reach the lung by inhalation, &c." This theory is indisputable owing to conclusive demonstration.

4. We have the theory of Bouchardat, which I may specify, as he described it, the theory of "*physiological misery*." This may be looked upon as a theory somewhat between the diathesis theory and that of infection, and would in every way be rather a happy one if it did not bring us back by the induction of its originator almost to the borderland of spontaneous generation.

These four theories seem to me to be about the most marked and distinct, and not alone are they selected for these reasons, but also on account of the eminent authorities supporting each. I trust that in seeking after information it may not be considered that, while stating my own views, I have not followed leading theories, or given them anxious consideration. I cannot accept the appearance of the bacillus in question, in the form in which we have seen it under cultivation, as being its first stage. I know that tubercle bacilli are cultivated from tubercle bacilli—like begetting like—but this seemed to me to be only one revelation in its life's history, nor could I find convincing proof in such demonstration that the tubercle bacillus, without passing through a host, exists at all; I believe as such, *ab initio*, it has no existence. In any attempt to justify and support such an assertion it is necessary to consider somewhat collateral subjects. Let me, therefore, turn from the tubercle bacillus, and consider the teaching from a few facts, which may be regarded as in some degree analogous. It is quite understood that a cup of healthy milk, left in a vitiated atmosphere, soon passes into a condition of physiological misery; if time sufficient is allowed, it also becomes the fertile ground of bacilli, bacteria, and vibriones; possibly if left long enough, and if it had the vitiated air ramifying through it, as is the case in the lung tissue of the "miserable," it would even develop phthisis. Water teeming with ova, meat impregnated with organisms, need only the presence of a host to become changed to entozoa or helminths, very different from their original form; such events cause us now no wonder. Air, like meat and water, is a food—perhaps what may be called an inorganic one, yet in relation to vital functions it is a food—if then, air is impregnated with organisms, as in vitiated atmospheres, such organisms, like pollen from some seed-disseminating trees, seek but a fertile ground. In the lungs

of the healthy they can find no abiding place, for therein the metabolism of pure and healthy tissue probably destroys them; but with the "miserable" the circumstances are not so happy. In their case masses, histologically speaking, of effete organic substance, form a manured and fertile ground for germs, sucked in myriads, perhaps during a long time, and disseminated to every region of the lungs through the ramifications of the bronchi; and amidst the hosts of spores and germs of such vitiated atmosphere, is it not permissible to conceive that some form which can find no fertile ground in the lungs of the healthy, may in the effete lung tissue of the "miserable" find a soil and pabulum whereby, through some as yet hidden metamorphosis, it becomes revealable subsequently as the tubercle bacillus? And here I may be permitted to say a word in passing touching upon the microscopic appearance of this bacillus. There is, so far as I can discover and understand, nothing against my advancing the theory that this and similar beaded bacilli are histologically formed of bisessile joints—like some of the *tænia helminths*—which, transversely separating and moving to new parts of the pabulum, so proliferate their kind in successive generations.

The conclusions I draw from such considerations are:—

1st. That the disease termed phthisis is one secondary to a condition of "physiological misery," and is brought about by infection—using the term in its widest sense—due to a bacillus—a portion thereof, or an unknown ovum or spore.

2. That the tubercle bacillus, *ab initio*, has no more existence than, for example, the *bothriocephalus*, without passing through a host.

3. That such a disease, being zymogenic, is preventable, at least in such sense as this latter term is used in sanitation generally.

In connection with the question to what extent does the climate of British Guiana predispose to the invasion of phthisis, I may at once state that I do not consider the climate has been proved to be pernicious to a healthy pulmonary condition, unless, indeed, to those who violate the laws of nature and hygiene; and if it were not for malarial attacks which, in the form of exacerbations of bodily temperature, often, if not always, tax the lung tissue, I consider that the climate would be an unfavourable one to phthisiogenesis of all forms.

I believe that malarial fevers and insanitary causes lead to more than 70 per cent. of all the lung lesions in this colony, and that the

word malaria, in our present state of knowledge, may be almost entirely supplanted by the word "insanitation," under which head, therefore, we consider may justly be placed the origin of nearly all the cases of pneumonic phthisis acquired in this colony. Of the remaining 30 per cent., 25 I unhesitatingly assign to an origin arising from what I can find no more expressive term for than "pneumonia alcoholica." The persistent abuse of alcohol by those exposed to the ill effects of insanitation tells quickly upon the lung tissue, whose delicate structure and unceasing metabolic function, together with its exposure—not alone, indeed, like that of internal organs, but by their (the lungs') special duty as external ones also—to all the vicissitudes of life and its unceasing action, become thus the most taxed as well as the most exposed organs of the human frame, and thus the first, as the most taxed, to yield to such *misère physiologique* as that which Professor Bouchardat, some time ago, described as the possible *origin* even of the tubercle bacilli! Whether such theory, in view of more recent researches, should deservingly be assigned altogether to the domains of scientific romance, is not my place here to consider; but I do assign the two causes I have mentioned, i.e., insanitary influences and alcohol, as the chief factors in preparing a fertile ground for all forms of phthisis.

This *misère physiologique* of Bouchardat links us very closely with the theory of Virchow, Koch, and others, in so far that the germ of phthisis is not inherited as is that of syphilis, but that a certain condition is, and but awaits, as I maintain, some noxious influences such as I have herein cited to have phthisis aroused in all its severity. I do not consider that this idea limits us to the doctrine of spontaneous generation, so criticised by Tyndall, Baumgarten, and others. As I have already said, is it not possible and, moreover, even permissible to conceive that, amidst the hosts of spores and germs arising from insanitation, some which can find no fertile ground in the lungs of the healthy may, in the effete lung tissue of the "miserable" in this sense, find a soil and pabulum whereby, through some metamorphosis, they become revealable subsequently as the tubercle bacilli? The disposal of the modest remainder, i.e., 5 per cent., probably may be assigned to the phthisis of, comparatively speaking, idiopathic pneumonia.

ART. XX.—*Anæsthetics*. By GEORGE M. FOY, F.R.C.S.I.;
Surgeon to the Whitworth Hospital, Drumcondra.

(Continued from p. 298.)

ONE of the last, if not the very last, occasions in which an internal remedy was used to produce anæsthesia was that recorded by Dr. Chisholm,* of Inverness, who substituted morphin for ether in a case of ablation of the breast, successfully performed on a woman, who declared she felt no pain during the operation.

The empiricism that guided our forefathers in the practice of surgery is nowhere better shown than in their use of anæsthetics; although they knew of their power to prevent pain during cutting and burning operations, they never seem to have used them for the prevention of the pain caused by returning dislocated limbs to their normal position, or for the setting of a fractured limb. Any reader of Galen's seventh book will know how painful many of the methods adopted for reducing luxations were; and in the illustrated editions of his works the artist graphically depicts the look of agony on the faces of the unfortunate patients who are undergoing the torture of the cumbrous methods adopted to produce reduction of luxations during the Middle Ages.

The older surgeons never seem to have recognised the fact that anæsthetics relax the muscular tissue; so we find that when the relaxation of the muscular tissue was determined on, the lancet or a warm bath was resorted to, and the surgeon's pupil was always instructed to take advantage of the patient having fainted to attempt the reduction.

Certainly the fact that the patient was formerly kept for hours under the influence of the anæsthetic may have had something to do with their not using these agents in the case of luxations, for they may have dreaded lest any indiscreet movement on the part of the patient whilst recovering from the effects of the drug would re-produce the injury.

The discovery of Mr. Davy, of Bristol, in 1799, of the anæsthetic effects of nitrous oxide gas marks an epoch in modern surgery, and with the beginning of the nineteenth century commenced the scientific investigation of anæsthetic agents. Most fortunately for medicine, the examination of the proposed agents, as a rule, fell to the lot of the most gifted scientists. Davy

* *Lancet*. Vol. I., p. 578. 1847.

examined nitrous oxide gas, and Faraday first enunciated plainly the anæsthetic properties of ether.

The century was still young when a correspondent of the *American Journal of Science and Art*, edited by Mr. Silliman, drew attention to the fact that a mixture of alcohol and the newly-discovered chloride of olefant gas was an agreeable and diffusible stimulant. This notice attracted the attention of a reader of and writer for the journal, Mr. Samuel Guthrie, of Brimfield, Mass., who was then residing in Sackett's Harbour, New York State. His article was entitled, "A Spirituous Solution of Chloric Ether," describing its preparation and properties, and it reached Mr. Silliman, the publisher of the journal, on the 8th of May, 1831, having been completed by the author some months previously, and it appeared in Oct., 1831. A later and fuller account, referred to by Dr. Jonathan Pereira,^a was published by Mr. Guthrie^b in January, 1832, as follows:—"Into a clean copper still put three pounds of the chloride of lime and two gallons of well-flavoured alcohol, of sp. gr. 0·844, and distil. Watch the process, and when the product ceases to come over highly sweet and aromatic, remove and cork it up closely in glass vessels. The remainder of the spirit should be distilled off for a new operation. The proportions are not essential; if more chloride of lime be used, the ethereal product will be increased; nor is it necessary that the proof of the spirit should be very high; but I have commonly used the above proportions and proof, and have every reason to be satisfied with them. From the above quantity I have usually obtained about one gallon of ethereal spirit."

Although Dr. Pereira had declared in his favour, Guthrie's claims did not pass unchallenged, and for a considerable time Soubeiran was credited with the discovery. His paper appeared in January, 1832.^c In 1831 he submitted to distillation a mixture of chloride of lime and alcohol, and examined the distilled product. He found it to consist of carbon, 14·39; hydrogen, 2·35; chlorine, 83·26.

The atomic composition which he gave for this liquid was CHCl . He termed the liquid *bichloric ether*, because it contains, as he says, twice as much chlorine as is contained in the chloride of olefant gas.^d

^a *Pharmaceutical Journal*. Vol. V., p. 412. 1845-46.

^b *Silliman's American Journal of Science and Art*. Vol. XXI., p. 64.

^c *Ann. de Chem. et de Physique*. Tom. XLVIII., p. 131.

^d *Dr. Pereira. Pharm. Jour.*, Vol. V., p. 412.

Latterly Liebig, even in some of our best books, is awarded the honour of being the discoverer of the chemical.

His account was published in November, 1831, six months after Guthrie's MS. was in the publisher's hands, and one month after its publication. Dr. Pereira gives the date of publication in the *Ann. de Chem. et de Phys.*, XLIX., as 1832, and writes of Liebig as follows:—"In 1832 he examined the product obtained by submitting to distillation, in a capacious retort, diluted alcohol and chloride of lime. He analysed the distilled product, but failed to detect the hydrogen in it. According to his experiments, the compound consisted of carbon, 12.6523; chlorine, 88.18. The formula which he deducted from this analysis was C_4Cl_3 , and he called the liquid *chloride of carbon*."

Thus we find three chemists were unknowingly all tending to a great discovery; and although Guthrie antedated the other by a few months only, nevertheless he is entitled to the credit of the discovery, and his American brethren have at last become alive to their duty towards him, and a monument is to be erected to his memory by the Jefferson County (N.Y.) Historical Society.

It is a curious fact that Guthrie, who was born in 1782, and was a surgeon in the U. S. A. in 1812, just lived to hear the chorus of applause that greeted Simpson's introduction of chloroform anæsthesia, and to see the claims of Professor Ives, of Yale College, ignored. He died in 1848; and until the Chicago Medical Association undertook to investigate his claims, he was literally unknown to the profession—and the ordinary biographical dictionaries, which delight to perpetuate the memories of nobodies, have no space for Samuel Guthrie.

The three independent discoverers selected each a different name for the chemical, and when, in 1834, Dumas^a examined the liquid, he showed that Soubeiran had not obtained "it pure, and that Liebig made an error with regard to its composition. From his analysis of the pure liquid, he deducted the following as its real formula:— C_2HCl_3 . On account of the relation of its composition to that of formic acid (C_2HO_2), Dumas denominated this liquid *chloroform*."

Liebig admitted the accuracy of Dumas' analysis by adopting his formula of the composition of this liquid. He, however, disregarded Dumas' name for the substance, and adopted that of the chloride or terchloride of formyle (formyle chloride).^b

^a *Ann. de Chem. et de Phys.*, LVI., p. 134.

^b Dr. Pereira, *ib. supra*.

In a letter to Dr. Jacob Bigelow, of Boston, dated from Edinburgh, April, 1870, by Sir James Young Simpson, he states that "the first case of an anæsthetic operation under chloroform occurred at Edinburgh on the 15th of November, 1847," and he appears to have been induced to try the substance because of the unpleasant smell the vapour of ether gave his clothes, which was extremely unpleasant to some of his patients. He writes:—"I found that no busy obstetric practitioner could extensively employ sulphuric ether without inevitably carrying about with him, and upon his clothes, an odour so disagreeable to many other patients and other houses, as to make his presence there aught but desirable."^a

What led Simpson to select chloroform as an anæsthetic is thus told in Mr. Waldie's "*Medicinal History of Chloroform*:"^b—"To the best of my knowledge, from the result of many inquiries, it (chloric ether) seems to have been introduced into this country as a medicinal agent first in Liverpool, where, indeed, in the form of a spirituous solution, it has been more known than in any other part of the country, and from which, I believe, the knowledge of its therapeutic properties has extended. About the year 1838 or 1839, a prescription was brought to the Apothecaries' Hall, Colquitt-street, one ingredient of which was chloric ether. No substance being known here of that name, having the properties of that with which the mixture was previously prepared, Dr. Brett, then the Company's chemist, in investigating the subject, found in the United States Dispensatory, the formula for its preparation, and prepared some. Its properties pleased some of the medical men, particularly Dr. Formby, by whom it was introduced into practice in this town (Liverpool).

"After coming to take charge of the Company's laboratories, I found that the method of preparation yielded a product which was not of uniform strength, and sometimes of disagreeable flavour. Accordingly, I altered the process by separating and purifying the chloroform, and dissolving it in pure spirit, by which a product of uniform strength and sweet flavour was always obtained. Thus prepared, it is much superior to specimens I have seen of London manufacture. Those members of the profession who are in the habit of using it, prefer it greatly to sulphuric ether, as possessing all its remedial value, and being very much more agreeable. The

^a Simpson's *History of Anæsthesia*.

^b *Lancet*. Vol. II., p. 687. 1847.

vapour of the so-called chloric ether seems to have been tried as a substitute for sulphuric ether in February or March last, but without very satisfactory results, which, indeed, could scarcely be expected, unless the vapour of alcohol possessed the same properties, it being composed principally of alcohol. When in Scotland, in October last, Dr. Simpson introduced the subject to me, inquiring if I knew anything likely to answer. Chloric ether was mentioned during the conversation, and being well acquainted with its composition, and with the volatility, agreeable flavour, and medicinal qualities of chloroform, I recommended him to try it, promising to prepare some after my return to Liverpool, and send it to him. Other engagements and various impediments prevented me from doing this so soon as I should have wished, and in the meantime Dr. Simpson, having procured some in Edinburgh, obtained the results which he communicated to the Medico-Chirurgical Society of Edinburgh on the 10th of November."

The *Edinburgh Daily Review* of October 27th, 1869, contained an account of a banquet given to Simpson in recognition of the material advantage to the city of his residing there, and he was complimented by the Lord Provost on his discovery, twenty-two years after his first use of chloroform as an anæsthetic, and thirty-seven years after it was first used by Professor Ives, of New Haven, whose case is related under date of the 2nd of January, 1832.*

In all the many opportunities afforded to Simpson of acknowledging the claims of Americans to the discovery of the anæsthetic properties of chloroform, there is no mention of their priority of claim to the discovery, and Guthrie and Ives remained unknown to the multitudes that gave the credit to Simpson.

Chloroform rapidly grew in public favour, and in a short time might be said to be the sole anæsthetic employed. In 1847, Simpson published a pamphlet, which was virtually a reprint of the paper he read before the Edinburgh Medico-Chirurgical Society, and as it gives a good picture of the professional opinion of chloroform when it came into general use, I give some extracts from it:—"Chloroform," says Simpson, "was first discovered by Soubeiran (1831) and Liebig (1832). . . . It has been used by some practitioners internally. Guillot prescribed it as an anti-spasmodic in asthma, exhibiting it in small doses, and diluted one hundred times. But no person, so far as I am aware, has used it

* *Silliman's Journal*. Vol. XXI., January, 1832.

by inhalation, or discovered its remarkable anæsthetic properties till the date of my own experiments. . . . As an inhaled anæsthetic agent, it possesses over sulphuric ether the following advantages." These advantages may be summarised as follows:—

1. A much less quantity of chloroform than of ether is requisite to produce the anæsthetic effect.
2. Its action is more rapid and complete, and generally more persistent.
3. Patients prefer it to ether.
4. It is less expensive than ether.
5. Its perfume is agreeable, that of ether being the reverse.
6. It is more portable and easily transmissible than ether.
7. No special kind of inhaler or instrument is necessary for its exhibition.

Simpson's original paper had some clinical reports on the effects of the new anæsthetic, which are wonderful examples of word-painting, notably the first case, that of an infant, which is as follows:—

"A child of ten weeks old had a very large nævus behind the ear. Dr. Duncan destroyed its internal organisation by passing large red-hot needles in different directions through it. While the tumour was hissing and decomposing under their action, the infant lay quietly and placidly asleep on my knee under the influence of chloroform."

On the publication of Simpson's paper, *L'Union Médicale*, Nov. 23, 1874, he claimed that it is to France and to a French physician that all the honour of priority of discovery is due.

The claim was founded upon a communication made by M. Flourens, in March, 1847, to the French Academy of Sciences, and published in the 24th volume of the *Comptes Rendus*, which was as follows:—

"Hydrochloric ether produced the same effect as sulphuric ether. The action of hydrochloric ether has led me to test the properties of the new compound known under the name of chloroform. In a few minutes (from four to six) an animal exposed to the respiration of the vapour of this liquid became perfectly etherised. The spinal marrow was then laid bare, and the posterior roots were found insensible."

Mr. Jacob Bell had, however, priority to either Simpson or Flourens in the use of the anæsthetic, for in the *Pharmaceutical Journal* for February, 1847, he wrote that chloric ether as an

anæsthetic "has been tried in some cases with success. It is more pleasant to the taste, but appears to be rather less powerful in its effects than sulphuric ether."

Chloroform was largely used for other purposes than as an anæsthetic when it was first introduced. It was used internally as early as 1832 by Professor Ives and Dr. Nathan B. Ives in asthma, spasmodic cough, scarlet fever, and atonic quinsy. It was employed by Dr. Formby, of Liverpool, in hysteria, in 1838; by Dr. Tuson, of London, in cancer and neuralgic affections, in 1843; and by M. Guillot, of Paris, for asthma, in 1844. M. Chandler's case of spasmodic asthma was treated by the inhalation of the vapour of the drug, and, as published in the *Medical Gazette* for the 17th of December, 1847, has many points of resemblance to Professor Ives' case of January, 1832.

In a paper on the history of chloroform, read before the Medical Society of London on the 6th of December, 1847, by Dr. Cogswell, he makes the following statement: "I have reason to know that Dr. Pereira has been in the frequent habit of using chloroform medicinally, both in hospital and private practice, for several years past."

There is no claim put forward on behalf of Dr. Pereira for having given it by inhalation; but Pereira was a reader of *Silliman's Journal*, and from it transcribed for the *Pharmaceutical Journal*, Vol. V., Guthrie's method for preparing the substance. Consequently, we can hardly believe him to have been ignorant of the therapeutic value of its inhaled vapour.

The opinion formed of the substance as an anæsthetic by the leaders of medical opinion soon after its introduction in 1847 is worth recording. The *Medical Gazette* of the 3rd of December, 1847, writes:—"During the last week the chloroform has been employed as a means of allaying pain during surgical operations in most London hospitals. As far as we can learn, the result of this experiment, as tested in several capital operations, has been to show that this agent produces its effect with more rapidity and certainty than the vapour of ether, and that its action appears to be attended with fewer disagreeable consequences—such as the evidences of pulmonary irritation, &c. Its influence as regards the condition of the patient during the operation is considered to be nearly identical with that of ether."

It was given in quantities that would shock the modern surgeon, and its administration was entrusted to any person. Not infre-

quently assistants in chemical laboratories amused themselves by putting each other under the influence of the new remedy. No precaution was taken in its administration; it was given on handkerchiefs or towels, and there was no regard paid to quantity. Some of the fluid was poured on a cloth, and this was held over the patient's face until anæsthesia was produced. Simpson recommended a towel folded into the shape of a cone to be used—a method which is still used by many surgeons; indeed, Mr. Hunter M'Guire, in his pamphlet on anæsthetics, considers that a towel makes the best inhaler of the many on the market, whose excellencies are duly or unduly magnified by instrument makers. From my own experience I prefer Skinner's apparatus; it allows of a free admixture of atmospheric air, and if the chloroform is added to it drop by drop from a York glass drop-bottle, I cannot believe an untoward result possible in a case selected with any ordinary amount of skill.

It cannot be a matter of surprise that the reckless administration of a potent medicine by persons ignorant, not only of the nature and physiological effects of the drug, but in many cases of the veriest rudiments of anatomy and physiology, should end in disaster, and that a very valuable agent should have been brought into disrepute.

One of the earliest to protest against the indiscriminate use of the remedy by ignorant persons, and the reckless manner in which it was used by the profession, was the late Mr. H. Stapleton, who, in a speech at a medical meeting in the winter of 1847, foretold what would be the result of the then method of using the drug. Very soon "Death from Chloroform" became a familiar heading in medical papers; the public confidence was shaken, and coroners' inquests became inquisitorial courts, prying into the precautions taken to avert death. It was found that certain persons could not inhale chloroform vapour with impunity, and that an examination of the physical condition of the patient about to be anæsthetised was advisable, and, indeed, necessary; precautions were taken to remove all impediments to free respiration, and stays were undone, and waist belts unloosened—in fact, the profession, having burnt their fingers through carelessness, discovered that the public would not tolerate a recklessness in the discharge of their duties, and they commenced to adopt measures for public safety which should have been in vogue from the beginning; but when the public appeared satisfied with the steps taken, all at once professional energy slackened, and to this day, of the many licensing

bodies that grant certificates in medicine and surgery, not one of them requires the student to be trained in the administration of anæsthetics, and no lectures on pharmacology are demanded, and in the majority of them the chemistry examination is a sham, so that a very small percentage of practitioners commence their career with anything like a decent knowledge of "substitution" products, and the "fatty" and "aromatic" series are to the majority unknown even in name. The natural result is that on a death occurring during anæsthesia the evidence that death results from fatty heart is usually conclusive, neither the composition nor the physiological action of our principal anæsthetics being properly taught, and the student commences practice too often guided by empiric rules, when he should possess an intelligent conception of the nature, action, power, and uses of the drug, together with a clear idea of how best to counteract any injurious effects of it. Until this is done, the true value of the drug will neither be known nor appreciated, and we will go on ascribing deaths to other than their true cause—the neglect of our licensing bodies to enforce a thorough training in the essentials of the science of medicine.

(To be continued.)

CANCER OF THE GALL-BLADDER SIMULATING FLOATING KIDNEY.

DR. TISCHENDORF, of Leipzig, relates a case of cancer of the gall-bladder, which, from its external abdominal appearance and its symptoms, closely simulated floating kidney. On making an abdominal incision, the gall-bladder was found to be diseased and full of biliary calculi. It was excised, and the case terminated favourably.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 24.

PEROXIDE OF HYDROGEN IN WHOOPING-COUGH.

ONE of the most recent remedies for whooping-cough is peroxide of hydrogen. Dr. Richardson, who recommends its use, prescribes it as follows:—℞. Hydrogenii peroxidi (10 °/o), 3 vi.; glycerini, 3iv.; aq. destil., ad 3iii.—℥. ft. mist.; half an ounce with two ounces of water for a dose.

TREPHINING AN INFANT'S SKULL.

DR. W. H. PARCELS (*Medical and Surgical Reporter*, March 21, 1888) reports a case of successful trephining of the skull of an infant seven and a half months old for a depressed fracture. No unpleasant symptom occurred, and the child made a rapid recovery.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON DISEASES OF THE SKIN.

1. *Diseases of the Skin.* By H. RADCLIFFE CROCKER, M.D., Lond.
London: H. K. Lewis. 1888.
2. *Pathology and Treatment of Ringworm.* By G. THIN, M.D.
London: J. & A. Churchill. 1887.

1. THIS handsome volume embodies the experience and ripe knowledge of an accomplished and industrious physician, who has cultivated the field of dermatology with marked success. Although it necessarily contains much in common with other text-books of similar scope, it bears a strong impress of the author's individuality, and will assuredly rank among the best manuals of dermatology.

The illustrations, which, as a rule, are good, possess the merit of being all drawn from the author's own preparations, except those of parasites and of the normal anatomy of the skin. In reference to the latter point, the novel plan is adopted of simply giving eight illustrations from various sources, chiefly Ranvier, of the histology of the normal skin, without any descriptive text further than the requisite explanation of the drawings. These speak for themselves, and are intended merely as refreshers to the memory of the reader.

A sensible tone pervades the book, the language is clear, and the directions for treatment are full and judicious. We commend the following remarks upon diagnosis to the attention of our readers, and would fain hope that they are gradually becoming less applicable—thanks to the increased care taken by not a few clinical teachers in the instruction of students in the elements of dermatology:—"Such feeble attempts as 'erythema,' 'pityriasis,' 'lichen,' and 'lichenoid,' with which so many are content, are utterly useless, both for designation and as a guide to treatment; and if those who utter them only realised that they were merely saying redness, scaliness, and pimples in a foreign language, they would not take so much trouble to say so little, though no doubt they are

convenient cloaks to conceal ignorance from the patient" (p. 29). Curiously enough, in pp. 428-432 the term "lichenoid syphilide" occurs several times.

We hear so much clap-trap and pseudo-scientific discussion about the precise relative virtues and almost miraculous effects of this or that mineral water that it is refreshing to meet with a writer who looks at the matter in a plain, common-sense way. Let us hear Dr. Crocker:—

"Far more efficacious than swallowing the imported waters is a visit to the spas themselves. It must, however, be borne in mind that there are many other elements beside the composition of the waters which make for success in the restoration of the patient. Among these are the climatic conditions and the consequent change of air and scene, the regimen and regular hours, as well as the withdrawal from many of the temptations of society life. At some spas the topical use of the baths plays an important part; and last, not least, is the influence of hope and faith engendered in the carrying out of a new treatment, in which there appears to be a little mystery, and in which the very expense and trouble stimulate the patient to do all that he can to get well, instead of carrying out the treatment in the half-hearted way in which patients at home are too apt to subordinate the means of cure to their engagements and convenience. Although, therefore, to such self-indulgent patients a suitable spa may be the best means of cure, it must not be supposed that they are necessary to success, provided that a patient will give himself up to treatment at home as completely as may be necessary for the kind of case" (p. 716).

The book is thoroughly well done from beginning to end, and any of our readers who require a complete and practical modern work upon dermatology will not regret purchasing Dr. Crocker's book.

2. The object Dr. Thin has set before him is to describe the nature and peculiarities of the fungus of ringworm of the scalp and body, the changes in the human skin to which it gives rise, and the treatment which experience shows is most likely to be successful in destroying the parasite and curing the diseases which it causes.

The clinical features of ringworm are now pretty well understood and generally recognised, and are fully discussed in many text-books and in special monographs. Accordingly, we naturally turn with more interest to examine Dr. Thin's views upon the pathology and treatment of this troublesome affection. First, as

to the disputed question of the specific identity of the trichophyton fungus, we believe, with Dr. Thin, that the opinions of those who hold that this fungus is identical with *Penicillium*, *Aspergillus*, or *Mucor*, are based upon errors due to foul cultivations, since the difficulty of securing and maintaining a pure cultivation of the fungus is one not easily overcome by those uninitiated in modern methods of bacteriological experiment. Dr. Thin is careful to describe the exact mode of obtaining pure cultures of trichophyton tonsurans, and interesting illustrations of its life-history are introduced into the text. Regarding the manner of invasion of the fungus and its localisation in the skin, Dr. Thin has convinced himself that the fungus creeps into the hair-follicle and enters the hair-shaft *near the hair-root* well under the surface of the skin. From thence it grows upwards into the shaft, and at the same time with great luxuriance between the sheaths of the hair and the shaft.

In the matter of treatment Dr. Thin trusts chiefly to carbolic glycerine and citrine and white precipitate ointments. He evidently inclines to the views of the French school, represented by Vidal, Besnier, and Lailier as to the *rationale* of the therapeutics of ringworm, and M. Besnier's observations, which will be read with surprise by some, are worth reproducing:—

“No medicinal substance can destroy *trichophyton* without exciting a dermatitis in the hair-follicle to a dangerous extent.

“There does not exist any parasiticide properly so-called for the parasitic fungi of the skin. For patients who have a delicate skin all irritants are hurtful. In those who have not this peculiarity, the elimination of the affected hairs is favoured by local applications of tincture of iodine, or of tincture of iodine mixed with chloroform, or with strong acetic acid, repeated according to the effect produced.

“The applications ought to be made and their effect watched by the medical man himself.

“I possess notes of the cases of a great number of patients treated elsewhere by irritants who bear the indelible traces of the unhappy intervention of the medical man, and this in an affection in which a spontaneous cure is an absolute rule.

“The duration of tinea tonsurans is always long—from two months to two years. I do not admit as cures cases in which the cure is not established by the microscope. Nine-tenths of the patients whom medical men send back to school as cured are not really cured, as the microscope shows, and this is an essential cause of the propagation of the disease.

To resume, I make no pretensions in my treatment to destroy *trichophyton* once developed in the hair-follicle.

"I only seek to limit its extension by isolating the patch or patches by means of epilation, to sterilise the parts not yet affected by preserving them from every cause of irritation, and from all traumatism which favours extension by auto-inoculation, and by using the lotions or ointments either simple or slightly impregnated with copper, which I consider best adapted to sterilise hairs against the growth of *trichophyton*."

Considérations Cliniques sur la Traitement du Catarrh Chronique des Fosses Nasales. Par le DOCTEUR LÉONCE LACOEURRET, à Salies-de-Béarn. Paris: Octave Doin. 1888. Pp. 150.

THIS little volume appears to have been produced largely with the object of setting forth the superior advantages to be derived by the subjects of chronic nasal catarrh from the use of the waters of Salies-de-Béarn, in which place the author practises.

Although freely admitting the value of a salubrious climate, regular and plain living, with other advantages to be obtained from a sojourn at a "water cure," we have grave doubts as to any specially good results to be derived from the local application of such natural waters as compared with washes and sprays artificially prepared, except, perhaps, that the patient when undergoing the "cure" will probably carry out the local treatment with more regularity and thoroughness than might be expected under ordinary circumstances at home.

Béarn, situated at the foot of the Pyrenees, was, from patriotic motives, brought into notice after the close of the late war, probably with a view of providing a rival to the better known German springs of the same class, but the efforts made to promote the use of this water were not very successful, and it remains still but little known.

The Salies-de-Béarn water is a strong brine, containing chiefly chlorides of sodium, potassium, and magnesium, with small quantities of sulphate and bromide of magnesium.

Chloride of ammonium—a salt which is not mentioned by M. Lacoarret, and which is found but very rarely, and, even then, in minute quantities in these waters most recommended in the local treatment of chronic nasal and naso-pharyngeal catarrh—gives results, in our experience, which, in view of the very intractable nature of the disease, may be considered encouraging.

While quite in accord with the author as to the decided superiority of the free use of washes over other methods of applying local remedies in the treatment of the disease under consideration, we must, even in the face of the strong recommendation of M. Moure, as quoted by our author, protest against the indiscriminate use of the "nasal douche." No doubt, in careful hands, this method of washing out the nares and naso-pharynx is quite satisfactory. Still, through carelessness or ignorance, serious consequences to the middle ear occur from its use, and we much prefer the ordinary rubber bag syringe with the addition of a rubber nipple covering the end of the nozzle. This is perfectly safe in use, even by stupid patients, and by varying the force with which the fluid is injected a more effectual cleansing of the parts may be obtained.

Our author is clearly deeply impressed by the views and methods of treatment of Dr. J. Moure, the Parisian specialist, devoting a considerable space to quotations from that gentleman's writings.

In the section which deals with the hypertrophic form of nasal catarrh, the author does not appear to be acquainted with the views of Woakes, who asserts that in some cases such swellings may be really an early stage of what he describes as "necrosing ethmoiditis," and demand a line of treatment suitable to that form of disease.

There is nothing of novelty in the details as to treatment of the three forms of the disease described by the author, who for the most part merely recapitulates the various remedies, medical and surgical, and their modes of use recommended by the numerous writers mentioned in the "Index Bibliographique," which concludes the volume. The book is illustrated at the end by two pages of figures of appliances previously mentioned in the text.

A Practical Treatise on the Diseases of the Hair and Scalp. By
G. T. JACKSON, M.D. New York: E. B. Treat. 1887.

DR. JACKSON can scarcely be credited with having substantially added to our knowledge of the affections of the hair and scalp by the publication of this work; but he has certainly picked the marrow of the existing literature upon the subject, and has presented us with a laborious compilation from text-books and medical journals, dating from 1860. A copious bibliography, covering twenty-six pages, is appended, and will be found serviceable. Special attention is devoted to diagnosis and treatment. Full directions are given for the method of removal of superfluous or

unsightly hair by electrolysis, and we quite agree with the author that by this means, and by this alone, can hairs be effectually and permanently removed without disfigurement. Chapter III. treats of the hygiene of the hair, and some of the directions in it provoke a smile—*e. g.* :—

“Girls should wear a pendant braid; and women whose hair is grown and who gather the hair into a coil, should use large hairpins in fastening it, preferably of rubber or bone, with absolutely smooth surfaces. In doing up the hair care should be taken not to drag upon it; and drawing it into unnatural positions, such as pulling the hair from the back of the head over forwards to near the forehead should be avoided. If a woman's hair curls naturally, she should be thankful for the favour therein bestowed, but should it not curl of itself, she should not attempt to make it curl by singeing and squeezing it between hot irons, scorching it over a hot pipe-stem, or twisting it up-tightly in curl-papers.”

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P. Seventh Edition. London: H. K. Lewis. 1888. 8vo. Pp. 1,044.

IN a little more than three years another edition of this standard work has been exhausted, and the seventh edition now lies before us. We have compared it with its immediate predecessor and find that it has been carefully revised. To the section on “Diseases of the Nervous System” an interesting account of “Multiple” or “Peripheral Neuritis,” from the pen of Dr. C. E. Beevor, Assistant Physician to the National Hospital for the Paralysed and Epileptic, London, has been added, as well as a description of Thomsen's Disease (Congenital Myotonia). When shall we give up this wretched and unscientific system of calling diseases by men's names?

In a completely new chapter (XCV.), on “Certain Peculiar Diseases,” we have good clinical descriptions of Raynaud's disease, or symmetrical gangrene of the extremities (local asphyxia); of beri-beri, or barbiars (of Ceylon, where especially it is endemic); and of actinomycosis, first observed in man by Drs. Theodore Acland and Sharkey, in the year 1885.

This edition runs to 1,044 pages, or 32 more than were contained in the sixth edition. We notice the unaccountable omission from the very full index of any entry referring to progressive pernicious anæmia—a condition which is briefly described at page

579. Dr. D. MacAlister's views on the theory of fever are given in abstract at pages 86 and 87. From these few remarks it will be seen that Dr. Roberts has spared neither time nor trouble to keep his excellent handbook abreast of medical progress.

Årsberättelse (den nionde) från Sabbatsbergs Sjukhus i Stockholm för 1887. Afgifven af DR. F. W. WARFVINGE, Sjukhusets Direktör och Öfverläkare vid dess medicinska afdelning. Stockholm: Isaac Marcus' Boktryckeri-Aktiebolag. 1888. 8vo. Pp. 248.

The Ninth Annual Report of Sabbatsberg's Hospital, Stockholm, for 1887. Edited by DR. F. W. WARFVINGE, Director of the Hospital and Senior Physician of its Medical Department. Stockholm: Isaac Marcus. 1888. 8vo. Pp. 248.

A FAVOURABLE notice of the Eighth Annual Report of the Sabbatsberg's Hospital appeared last year in the pages of this Journal. The number of beds in the hospital continues to be 340. In 1886, 3,133 patients were treated, of whom 263 remained in the wards from the preceding year, and 2,870 were admitted during the year. Of these patients, 1,653 were treated in the medical department (of which Dr. Warfvinge is senior physician), compared with 1,233 treated in the surgical department (of which Dr. Svensson is senior surgeon), and 247 in the gynæcological department (of which Professor Netzel is chief). Of the total number given above, 269 patients were carried on to the following year, 2,441 were cured or relieved, 172 were sent out as incurable, and the number of deaths ran up to 251, or 8·01 per cent. The number of days of maintenance was 99,363. The cost per diem and per patient amounted on the average to 2 francs 4 centimes (about 1s. 8d.), including 50·8 centimes (about 5d.) for dietary, and 11·7 centimes (about 1d.) for medicines. For the electric lighting—established in 1884 and including 228 incandescent lamps—the cost per hour and per lamp was only 1·2 centimes.

After abstract reports on the patients and diseases treated during the year in the three departments, or divisions of the hospital, and a report—also in abstract—of 1,056 operations performed in the surgical department (917) and in that of gynæcology (139), come special reports and clinical records by the different members of the medical staff.

Dr. E. S. Perman reports a case of hæmorrhage from a vascular

mediastinal tumour which ruptured, followed by sudden death. Dr. E. G. Johnson contributes some researches on the rennet of the human stomach in pathological states. Dr. G. D. Wilkins has a contribution to our knowledge of the number of blood-corpuscles and the amount of hæmoglobin in health and disease. Dr. E. S. Perman supplies a paper on the "Operative Treatment of Ankylosis of the Hip." Dr. Ivar Svensson and Professor C. Wallis report a case of Ulcer of the Duodenum with obliteration of the common, cystic, and hepatic bile-ducts, and of the canal of Wirsung, in a man aged forty-three years. There is "A case of Chyluria" from the pen of Dr. G. D. Wilkins; and the work closes with an interesting paper by Dr. Warfvinge himself on "Acetphenetidin and Acetanilide," in completion of his communication on Antipyrin, which appeared in the Report of the hospital for 1885.

"Acetanilide" or (as it is more commonly called) "antifebrin," was tried by Dr. Warfvinge in 187 cases of different diseases with or without pyrexia in Sabbatsberg's Hospital. According to the author's experience, antifebrin disputes the claim of antipyrin to be considered the chief of antipyretics known as yet. It possesses the advantage over the latter of its cheapness and small doses. It is the equal of antipyrin as a remedy in neuralgias and other painful affections.

Ireland: Its Health-Resorts and Watering Places. By D. EDGAR FLINN, F.R.C.S.; Examiner in Physiology, and late Examiner in Hygiene and Public Health, Royal College of Surgeons in Ireland, &c., &c. London: Kegan Paul, Trench & Co. 1888.

MR. FLINN's book has one great element of success—a catching title; and the prospect of fame is made more sure by the selection of an eminent firm of publishers. Both the profession and the public much need a good guide to Irish health-resorts. It is quite true that papers on some of the more favoured watering-places had from time to time appeared, but the public were still unsatisfied, and most of these papers had an ephemeral existence. Mr. Flinn, however, was not discouraged at this want of appreciation for the unread papers, and the happy idea occurred to him to make a compilation of some of them, add a good deal of original matter, and bind the resulting book in an attractive style.

In proof of our contention that the work is in no small degree a compilation, we would instance the section on "Glengarriff," which is described in a footnote as a "Paper read by the author at the

Section of State Medicine of the Royal Academy of Medicine in Ireland, April 6th, 1888." It is quite true that such a paper was read by Mr. Flinn, but it so happens that the paper in question is almost entirely compiled from an old advertisement of the Eccles' Hotel, Glengarriff, of which a second edition—entitled "*Remarks on the Advantages of Glengarriff as a Winter Health-Resort and Sanatorium*"—was published by R. J. Bush, of 32 Charing Cross, London, in 1877. This handsomely-bound and well-printed pamphlet contained editorial notices of Glengarriff, amongst others from *Punch*, of November 18th, 1876; the *Morning Post*, of January 10th, 1877; *Saunders' News-Letter*, of February 14th, 1876; and the *Freeman's Journal*, of April 5th, 1876. There were also a number of testimonials from eminent members of the medical profession, which Mr. Flinn has reproduced with considerable effect. His chapter on Glengarriff is not, however, a mere advertisement of the Eccles' Hotel, for in it he speaks in high terms of commendation, not only of that hotel, but also of Roche's Royal Hotel, which, "charmingly situated within its own grounds, and standing on an eminence, has the advantage as a residence at the other seasons of the year (that is, in summer and autumn); its elevated, though well-protected, position renders it more bracing and invigorating, and not so relaxing; besides, it commands some of the finest views of the scenery around Glengarriff." (Page 78).

Nor is due acknowledgement of the sources of information, upon which he has drawn, always given by Mr. Flinn. We observe with surprise that the Appendix, containing statistical information relating to Ireland, is taken bodily from an excellent little work called the "*Pocket Atlas of Ireland*," by J. Bartholomew, F.R.G.S., and published in 1887 by John Walker & Co., of Farringdon House, Warwick-lane, E.C.

It is somewhat amusing to find such places as Sandymount, Merriem, and Clontarf solemnly included among "*Seaside Health-Resorts*" in Chapter IV. Balbriggan is described as having been "at one time a watering-place of considerable repute; it is now celebrated for its hosiery."

On page 148 we are told that "the botanist will find many rare and interesting plants amongst the ravines in the vicinity of the spas (of Lisdoonvarna), or in his excursions to the Burren (? Burreen) mountains." So he will, if we are to judge by the rare botanical names given to these unhappy plants by Mr. Flinn. He will find the "*adiantum capillis veneris*," "*dryas octopetala*,"

"*teucrum chamæpitys*," "*crithenum maratinum*," or "sampir;" "*britomus umbellatus*," "*rubus sezatilis*," and "*saxafraga granulata*." All these mis-spellings occur within the limits of one page. We give the correct botanical names for the sake of comparison—*Adiantum capillus Veneris*, *Dryas octopetala*, *Teucrium chamædrys*, *Crithmum maritimum*, *Butomus umbellatus*, *Rubus saxatilis*, *Saxifraga granulata*.

It will be observed from the foregoing remarks that we have not formed any very favourable opinion of Mr. Flinn's work. Sheridan once said of someone's speech that "What is good in it is not his, and what in it is his is not good." This exactly expresses our opinion in the present instance.

Doctors AND Doctors: Some Curious Chapters in Medical History and Quackery. By GRAHAM EVERITT, Author of "English Caricaturists and Graphic Humorists of the Nineteenth Century." London: Swan Sonnenschien, Lowrey, & Co. 1888. Pp. 422.

WE are unable to join in the somewhat extravagant laudation with which this compilation has been received by some of our contemporaries. It is not well written; it irritates by childish interpolations intended to make perfectly intelligible quotations more intelligible; and, in spite of the author's assurance in his preface that "for religious bigotry and intolerance I have no sympathy," his chapter on Modern Miracles will be considered offensive, and that on Spiritualism flippant. Yet the book is not a bad one on the whole; and its widely-leaded and clearly-printed pages—four hundred of them—will pleasantly occupy an idle hour. It is written for the public, not for the profession; but the latter, too, may derive amusement and perhaps information from Mr. Everitt's labours. Let us give a few examples from his collection.

In the early part of the 18th century one Dover discovered that crude mercury was a cure for everything, and Barton Booth, a first-rate actor and confirmed medicine-eater, suffering from "jaundice and intermitting fever," placed himself under the treatment. In four days he swallowed nearly 4 lbs. of mercury, and felt "very great pain and general uneasiness," as we should expect. His wife, alarmed, sent for our countryman, Sir Hans Sloane, who had nine ounces of blood drawn from the jugular, and (next day)

"an epispaſtic was laid all over the ſcalp" to relieve headache, and an emulſion adminiſtered to obviate ſtrangury. The patient died that evening, and "the whole tract in the inside" was found to be "lined with crude mercury, divided in globules about the bigness of pins' heads. The insides of the intestines . . . were as black as your hat," and "they would not endure the least strain without breaking in pieces" (p. 112).

The death of George II.'s queen, Caroline, from strangulated hernia is described in pp. 115-125. She had concealed her ailment from her medical advisers for fourteen years, but her husband and a court lady (absent when the symptoms of strangulation appeared) were aware of it. On the morning of the 8th Nov., 1737, she was seized with pain and vomiting, but went through the ceremonies of a drawingroom patiently, and then retired to the bed from which she never rose. Two physicians gave her snake-root, Sir Walter Raleigh's cordial, Daffy's elixir, mint-water, usquebaugh, without any good result, and then twelve ounces of blood were drawn. In the morning of the 10th she was bled again to twelve ounces. The fever and sickness abated. In the evening she said, "I have an ill which nobody knows of," but the hint was not understood. Sir Hans Sloane and another physician were called in; blisters and aperients were ordered, with more bleeding. Then the king bethought him of the old hernia; the true state of the case was discovered; surgeons were sent for, the operation was performed, and the queen died on the 20th.

We give the following "good story from Boileau" in the author's words:—

"A French physician, named Bernard, one day found an old Abbé, a stranger to him, playing at cards with one of his patients. He had no sooner seen him than he exclaimed with much vehemence—'What do you here? Go home; get bled immediately! You have not one minute to lose!' The Abbé remained motionless in great alarm. He was conveyed home. M. Bernard bled him, in the usual unstinting fashion, three or four times, drenched him, of course, with drastic drugs, but found him not one whit the better. On the third day, everything having been done that medical science could devise, and everything having failed, the sick man's brother was sent for from the country. He arrived in haste, and was informed that the Abbé was dying. 'Of what disease?' he inquired. M. Bernard assured him that, without being at all aware of it, his brother had been seized with a violent fit of apoplexy; that he had fortunately discovered it by seeing his mouth drawn awry; and had

treated him accordingly. 'Why, sir,' quietly replied the martyr's brother, 'his mouth has been awry these sixty years.'

We are told (p. 133), as an illustration of progressive improvement in medical and surgical practice, that in St. Bartholomew's and St. Thomas's Hospitals the proportion of deaths to cures (?) was 1 to 10 in 1741, 1 to 14 in 1780, 1 to 16 in 1813, and 1 to 48 in 1827; but we do not attach much importance to the figures. We are told, too (p. 144), that the Black Death, the scourge of the fourteenth century, reappeared in Dublin in 1866, and that "many persons of all ranks died a few hours after the seizure," and that "it is at this moment doing deadly work among the miners" in Wales. Culpepper's formula for determining the duration of an illness (1659) is worth mentioning. "Number the dayes from the twenty-six day of June to the day when a party first began to fall sick, and divide the number by three; if one remain, he will be long sick; if two, he will die; if none, he will quickly recover." Mr. Everitt's comment on this rule is unintelligible to us. "The only patients," he says, "who will die, according to the above table or reckoning, are those who fall sick on the 4th July. Any hope of arriving at 'one' or 'nothing' after this date, becomes a task as hopeless as the labours of Sisyphus" (p. 191). Andrew Borde (1500-1549) confesses his inability to cure prurigo, but proposes the following palliative:—"I do advertise every man for this matter to ordeyne or prepare a good paire of nayles, to cracke and clawe, and to rent and teare the skynne and the fleshe, that the corrupt bloud maye runne out of the fleshe . . . and beware, reverberate not the cause inwarde with no oyntment, and clawe not the skin with fyshye fyngers, but washe the handes to bedwards."

The Extra Pharmacopœia. With the Additions Introduced into the British Pharmacopœia, 1885. By WILLIAM MARTINDALE, F.C.S., and W. WYNN WESTCOTT, M.B. Lond. Fifth Edition. London: H. K. Lewis. 1888. Pp. 462.

AFTER an interval of three years another edition of this excellent little work has appeared. By careful revision the authors have been able to cut out some twenty pages of old matter, while they have added about sixty-eight pages of new matter.

The coal-tar derivatives, which have of late received so much

attention, are described—namely, antipyrin, antifebrin, salol, phenacetin, and saccharin. Then we have a modern group of hypnotics, including paraldehyde, urethan, sulphonal, amylene hydrate, and others. Cardiac remedies have received valuable additions in preparations of spartein, strophanthus, and caffein. Among antiseptics we find sal alembroth, fluosilicate of sodium, eugenol, and solution of carbolate of sodium. For skin diseases, we have descriptions of the various ichthyol preparations, of lanolin and mollin as bases, and of the plaister and salve mulls, as used by Unna, of Hamburg. For eye affections, an account is given of hyoscin salts, santonate of atropin, and the cocain preparations used in the Royal Ophthalmic Hospital. Amongst aperients, attention is drawn to cascara and its preparations, sulphovinate of sodium, and the topical use of glycerine in the rectum. We notice also a formula for a pill representing "Donovan's solution," and several formulæ for peptonoids of beef. Papain now is prescribed as an "elixir" or in lozenges.

It will be seen from this sketch that the "*Extra Pharmacopœia*" fully maintains its reputation as an excellent and accurate book of reference.

Notes on Surgery for Nurses. By JOSEPH BELL, M.D., F.R.C.S. Edin.; Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Second Edition, Revised and Enlarged. Edinburgh: Oliver & Boyd, Tweeddale-court. London: Simpkin, Marshall, & Co. 1888. 8vo. Pp. 153.

IN considering the worth of any book, especially books of the class before us, we must not be led astray either by the recognised merits of the author or the success his book has attained.

Within twelve months a new edition of Mr. Bell's book has been called for, clearly showing that his writing met with general acceptance, and, from the unassailable position of the author and the pronounced success of his book, a long string of platitudes could be strung together praising the care bestowed by the learned lecturer on the minutiae of his profession, and how, after acquiring credit for his work on operative surgery, he, for the benefit of nurses, undertook the very desirable duty of plainly and fully pointing out their duties and how they are to be performed.

But medicine claims our testimony, and it is incumbent on us to

speaking plainly, even though such speaking cannot but be unpleasant. We are, however, certain that the author will not misunderstand our motive, which is simply to consider the effect of such books as "*Notes on Nursing*" on the profession—Do they advance or retard science? We have no hesitancy in saying they are most injurious, even to the nurses for whom they are written.

The attempt to condense in one small volume of 153 pages an account of inflammation, suppuration, ulceration, gangrene, pyæmia, wounds, burns, fractures and dislocations, tumours, special operations, and the surgical nursing of children, particularly to make such subjects intelligible to those who know nothing of anatomy, physiology, pathology, or therapeutics, is too absurd to allow of examination.

The lectures were originally delivered orally to the nurses of the Infirmary, and we heartily sympathise with the women who sat out a discourse on "Tumours," in which the varieties of solid and cystic tumours are told and an attempt made to explain their causation. Suppose a nurse, by some miraculous intervention, did get into her head a good knowledge of the present ideas concerning sarcomata and carcinomata, would it be of advantage to her? Is she called upon to diagnose innocence and malignancy? Will not the smattering of surgical knowledge such a book gives only make her presumptuous and dissatisfied with the essential duties of her office?

Does the author seriously believe it to be part of a nurse's duty, in cases of "fractures of the jaws or bones of the face," to "try to put them in place, stitch up the skin most carefully and neatly? and," he goes on to say, "you will be both surprised and delighted with the unexpectedly good results you may get!" We are inclined to think the unfortunate patient would be surprised and deformed by the amateur performance.

The active interference in arterial bleeding that is recommended does not tend to improve the efficiency of nurses. To sanction, or even appear to sanction, a nurse's seeking out a bleeding vessel is, we think, an error. Without a tolerably fair knowledge of anatomy no rule can guide any person as to how and where to make proper pressure on bleeding vessels; and for nurses and amateurs the simple rule to press a finger or a sponge on the bleeding point is the best.

It is quite true that Sir A. Cooper when a boy controlled femoral bleeding with an extemporised tourniquet, but then Sir Astley as a boy was the "ugly duckling" of the flock.

Such books as "Notes on Nursing" benefit the author, discredit medicine, and make nurses unamenable to directions, self-opinionated, and ridiculous. We make no apology for condemning such works—they are most pernicious to surgery; they cause a number of persons to undertake duties for which they have had no proper training or education, and for which they consequently are incompetent; the duties are inefficiently performed, surgery is discredited, and the public are driven to seek relief from quacks and charlatans.

Illustrations of Clinical Surgery. Plates 85 to 93, concluding the Work. By JONATHAN HUTCHINSON, F.R.S., LL.D. London: J. & A. Churchill, 11 New Burlington-street. 1888.

WE regret to note that this is the conclusion of Mr. Hutchinson's illustrations of clinical surgery. They are so valuable, so instructive to every surgeon, that we hoped to see them continued for some time to come, accompanied by the interesting details and the wise conclusions supplied by the author in the letterpress. The present fasciculus contains illustrations of diseases of the tongue and of the skin. In most cases these are extremely well done, as may be said of those plates which have preceded them. The two volumes stand unrivalled in English surgical literature.

Practical Manual of Diseases of Women. By H. MACNAUGHTON JONES, M.D., &c. Third Edition. Illustrated. London: Baillière, Tindall, and Cox. 1888. Crown 8vo. Pp. 550.

WE have again to congratulate Dr. Macnaughton Jones upon the marked success which has attended the publication of his *Manual*, three editions having appeared within as many years. The present edition has not only been carefully revised and improved, but has been considerably enlarged. Amongst the many changes and additions we notice especially Dr. Bland Sutton's observations upon menstruation in monkeys, and those of Mr. Johnston on the nature of the endometrium, both of which tend to show that the idea of a menstrual decidua is erroneous, and that no such process as denidation follows menstruation. Alexander's operation for shortening the round ligaments has been moved out of the appendix into its proper place in the body of the work. There is also an excellent description of Mr. Lawson Tait's operation for lacerated perinæum

by that talented operator himself, and also an analysis of 1,552 cases of abdominal section performed by him, showing an average mortality but slightly over 4 per cent. There is a good description of vaginal hysterectomy, so frequently performed in Germany but so seldom resorted to in this country, from the pen of Mr. Reeves, of the London Hospital. The difficult subject of tubal disease is treated in as clear and concise a manner as our present knowledge permits of. We think that the author has done well in introducing the subjects of ovariectomy, cystitis, and stone in the female bladder, into this edition, which—we have no doubt—will prove as popular as its predecessors have done.

W. J. S.

A Treatise on Dislocations. By LEWIS A. STIMSON, B.A., M.D.; Professor of Clinical Surgery in the University of the City of New York; Surgeon to the New York, Presbyterian, and Bellevue Hospitals, &c. London: J. & A. Churchill. 1888.

THIS book is the sister volume to the author's treatise on Fractures, published in 1883.

In size and style the volumes correspond exactly; both are well and fully illustrated, and furnish most complete and concise descriptions of the lesions of the skeleton.

The delay in the issue of the present volume has been caused, the preface informs us, by "the great amount of material that had to be collected and examined in the preparation of the work." We are all the better pleased at the delay, for by it the value of the book has been greatly increased, as it furnishes an excellent reference index to the most modern writings on the subject of dislocations, scattered through the periodical literature of the day:—

"The Index Medicus, the Index Catalogue of the Surgeon-General's Library, the encyclopædias, and the greatly-multiplied text-books on surgery and periodicals contain or give references to a number of reported cases vastly in excess of those that have hitherto been within the reach of writers; and while this has greatly facilitated the search for cases, it has also rendered necessary a corresponding amount of labour to collect and utilise the material."

From this passage our readers can judge of the great value of the book as a help in searching for the recent additions to our knowledge of the subject of dislocations. In it will be found, well described, the details of the improvements in treatment of the well-

known and familiar injuries, as well as the facts discovered, which aid in the diagnosis of the more obscure and less known lesions.

We have, for instance, an excellent series of illustrations of Kocker's method of reduction of dislocation of the shoulder by manipulation, which will do more to familiarise the reader with the method than any mere description in the text. Just as Bigelow's method in reducing the hip dislocations has become generally known by the frequent publication of his graphic representations, so we hope these figures will make popular this facile method for treating shoulder dislocation. A good picture serves better to convey the idea of a complex manipulation than pages of even the most lucid writing.

In some parts there are blemishes in the text of this book which may well be corrected in future editions. We can see no use in adopting Latin titles for some injuries, while English serves for the naming of the greater number. In the chapters on Dislocations of the Ribs and the Costal Cartilages, and on Dislocations of the Clavicle, the author suddenly breaks out into Latin, and we have the sections headed "*Luxatio Chondro-Chondralis*," and "*Luxatio Claviculo-Retrosternalis*," and so on, until just down at the end of the clavicle chapter the stock of Latin seems used up, and Section C is thus headed—"Simultaneous Dislocation of both Ends of the Clavicle" (Total Dislocation). As in no other parts of the book is the Latin synonym used, there appears no reason for applying it in the case of the ribs and clavicle.

Again, in the description of elbow dislocations, the injuries of all others requiring clear and accurate writing, the author has so mixed his terms as to render his meaning unintelligible to any but a reader conversant with these injuries.

He starts with an error in naming the parts of the lower end of the humerus.

"Anatomy—On either side of the lower end of the humerus is a prominence—the *epicondyle*, which can be easily felt, and is of great importance in the recognition of any change in the relations of the bones that constitute the elbow joint. The inner one, commonly called the *epitrochlea*, is more prominent, &c. Below the *epitrochlea* is the flattened circular side of the *trochlea*. . . . On the outer side of the anterior and lower part of the *trochlea*, and separated from it by a shallow, vertical groove, is the *capitellum*, &c."

Such are the names assigned to the parts of the lower end of the humerus. We come to the section on the pathology of the dislo-

cation backwards, and we find the following, from which even one thoroughly initiated both in the pathology and literature of this subject will find it hard to extract the author's meaning:—

“If, in the production of the dislocation, the lateral outward flexion is more marked than the hyper-extension, the *capitellum* slips along the head of the radius to its inner side, and the latter lodges on the outer surface of the former, just *below the epicondyle*, while the coronoid process rests against the posterior surface of the *external condyle*, having been carried outward by pronation of the forearm. The posterior surface of the ulna is directed outward, and the anterior edge of the head of the radius rests against the *condyle* of the humerus.”

Again—

“If, now, the positions of *the two epicondyles* and the tuberosity of the olecranon can be recognised, it will be seen that the latter is displaced backward and upward, rising, if the limb is extended, above the horizontal line joining the *epicondyles*. . . . The head of the radius can be felt, perhaps even seen, under the skin, below and to the outer side of the olecranon, close behind the *external condyle*. . . . On the inner side, if the swelling is not too great, the finger . . . and then moving around the inner side, below the epitrochlea, to the front,” &c.

All through the account of the complicated lesions of the elbow-joint this mixing up different systems of nomenclature for the osseous points occurs, while a perfectly novel system, that of the author, is introduced at starting. We say perfectly novel, for to describe the lower end of the humerus as being possessed of two epicondyles, and no condyle at all, as the author does, is a novelty.

We would remind him that the terms of Chaussier, whom he would seem to attempt to adopt, are definite and precise.

Writing of the details of the lower end of the humerus, he says:—

“2°. À son extrémité cubitale une trochlée articulaire, un condyle, deux tubérosités; l'une, au-dessus de la trochlée est nommée Épitrochlée; l'autre, au-dessus du condyle, appelée Épicondyle.

If our author intends to adopt this naming of the parts of the bone, which is clear and distinct, let him stick to it throughout; but to alter it so as to make it absurd, and so altered to mix it indiscriminately with the older language used by Dessault and the writers previous to 1819, leads to hopeless confusion, of which the passages we have quoted are sufficient example.

With all these defects in this particular, the meaning of the author can be made out by anyone who knows enough of the subject to

discount his errors. To one who can do so the descriptions are valuable, and—as in other parts of the book—the references to the more recently published cases cover a wide range, and will save many an hour's work to those who desire to hunt up this branch of surgical literature.

The Movements of Respiration and their Innervation in the Rabbit With a Supplement on the Relation of Respiration to Deglutition, and on the question of the Existence of Respiratory Centres in the Spinal Cord. By MAX MARCKWALD. Translated by THOMAS ARTHUR HAIG; with an Introductory Note by JOHN G. M'KENDRICK, M.D., F.R.S. London: Blackie & Son. 1888. Imp. 8vo. Pp. 177.

IN this very able monograph, Dr. Marckwald discusses most of the problems connected with the difficult and unsettled subject of respiratory innervation. In most of his experiments rabbits are employed. In this animal, as is known, the movements of respiration are almost purely diaphragmatic. These movements are recorded by a comparatively simple phrenograph, designed by the author, and which enabled an accurate record of each experiment to be obtained with facility. Of these curves a great many are reproduced in the text and in an appended plate. The conclusions to which the experiments lead differ in several most important respects from the views which are generally current. We shall give these conclusions in the words of the author, referring to the work itself for the details of the experiments and for the reasoning based upon them. And here we would state that the treatise is one of the highest value, and, as Professor M'Kendrick says, "an excellent example of the true experimental method, guided by sound knowledge of the work of others, and checked by a severe criticism of results." Whether the results prove true or false, the work is one which cannot fail to influence profoundly the ideas of physiologists and the future course of inquiry.

"The results arrived at by this investigation may be thus expressed—

"1. In the medulla oblongata there lie in close connection with the roots of the vagus, the centres for respiration—a centre of inspiration and a more difficultly excited centre of expiration. During normal respiration the centre of inspiration alone is active, while

the centre of expiration becomes active only under exceptional circumstances. It is an auxiliary centre of respiration.

"2. There are no centres of respiration situated higher in the cerebro-spinal axis. All phenomena which have suggested the existence of such a centre can be easily explained as centripetal stimulations of the medulla oblongata, which, by reflex action, act on the respiratory centre in the fourth ventricle. The manner in which head dyspnoea takes place and disappears is a fact against the existence of higher situated centres.

"3. In the cervical part of the spinal cord there are only the central tracts of respiration; special centres for the liberation of respiration do not exist there.

"4. The respiratory centre in the medulla oblongata not only acts automatically, but can be excited by reflex action.

"5. The automatically active centre can only liberate respiratory spasms, not regular rhythmic respiratory movements.

"6. Normal rhythmic respiration is a reflex act, mainly liberated by the vagi, which prevent the gathering tension in the centre becoming too great, and convert the inherent stimulations of the respiratory centre into regular respiratory movements. The action is that of a 'discharger.'

"7. The vagi constantly stimulate; they possess tonus, and are sufficient to serve as the only active regulators of respiration. During absolute rest of the animal organism they probably act alone.

"8. Next to the vagi, the upper brain tracts are of great importance for the liberation of regular rhythmic respiration. They are capable of replacing the non-activity of the vagi, just as the vagi may compensate the non-activity of the upper tracts. During sleep, during hibernation, or after certain narcotics, the reflexes from the upper tracts on the respiratory centre often remain active.

"9. If a portion of the upper tracts remains non-active, while the vagi are still active, then periodic respiration may take place (Cheyne-Stokes respiration).

"10. For the accomplishment of periodic respiration a change in the excitability of the respiratory centre itself is not necessary. The latter can be excited during periodic respiration at the time of the periods as well as during the pause equally powerfully by means of weak shocks of the same strength.

"11. The sensory nerves of the skin cannot take the place of the brain-tracts or of the vagi.

"12. While the cutaneous sensory nerves in animals which are intact exercise very gentle, perhaps almost no, influence on the respiratory centre, this influence increases greatly after the brain-tracts become non-active. In these circumstances, skin reflexes are capable of liberating complete series of respiratory movements. The cutaneous nerves possess no tonus.

"13. The centripetal nerves which have an inhibitory action on the liberation of respiratory movements, as, for instance, the trigemini, laryngei superiores, and glossopharyngei, possess no tonus, and must be regarded as auxiliary nerves of respiration; during normal liberation of respiration they are not in activity.

"14. The trigemini and laryngei superiores (as well as olfactory and splanchnic nerves) on stimulation cause slow respiration, and, at last, stop it altogether in a position of expiration, while the glossopharyngei have no influence on the frequency of respiration. The action of the latter is always an absolute inhibition of respiration, and this in every phase of the same in which the stimulation becomes active.

"15. A single electric shock cannot of itself set the respiratory centre into activity, but only when its action is strengthened by other (intra-central chemical) stimulations.

"16. The shortest irritation of the respiratory centre that can be caused sends to the phrenics four active simple shocks, at intervals of about $\frac{1}{30}$ sec.

"17. The normal stimulation of the respiratory centre does not depend on the blood; neither from deficiency of oxygen nor from too large a quantity of CO₂ in the blood. Animals continue to breathe without a circulation and after bleeding for a considerable time.

"18. The Hering-Breuer mechanical respiratory theory is just as far from being correct, because, after opening of the pleural sacs, and even after extirpation of the lungs, rhythmic respiration continues.

"19. The active stimulating matters of the respiratory centre itself are probably of a similar nature to those which stimulate the isolated heart; perhaps, the products of decomposition of inter-cellular fluids.

"20. Apnoea has nothing to do with the gas contained in the blood, but depends, probably, on the removal of the stimulations stored in the centre, by means of the vagi in a state of tonus. Therefore, after section of the vagi, the production of apnoea is difficult, and it lasts only for a short time.

" 21. During apnoea one can neither by means of direct stimulation of the medulla oblongata nor of the central vagi liberate respiratory movements.

" 22. The respiratory centre of the foetus during respiratory rest in the uterus of the mother is in a condition of much lower excitability than after birth.

" 23. When central or peripheral stimulations during the act of birth have once caused respiration, then the continuously stimulated respiratory centre does not readily lose the stimulating impulse, and respiration goes on in a regular rhythmic manner.

" 24. Different phenomena, as the common-salt dyspnoea, and the cold dyspnoea (heat dyspnoea?) make it probable that the phrenics carry stimulations direct from the surface of the brain from a motor centre in the same, evading the respiratory centre in their passage downwards.

" 25. The presence of sensory fibres in the phrenics, as well as the extremely delicate muscular sensation referred to the diaphragm, support this view.

" 26. Rabbits, from the age of 4-5 months, after division of the phrenics may live; younger ones die from insufficiency of air, in consequence of incomplete expansion of the thorax."

In the first appendix Dr. Marckwald corrects an error into which he had fallen. The act of deglutition is associated with a short movement of the diaphragm of an inspiratory character. Marckwald thought this was not a true respiratory movement, but a passive displacement, caused by the pull of the contracting oesophagus. This view he now finds to be erroneous. The centres for deglutition and for respiration are close together, and intimately associated. Once the former centre is excited, an irradiation of the stimulus takes place to the centre of respiration, and calls out an act of inspiration, which is now immediately cut short by the inhibitory action of the glossopharyngeal nerves, which are excited by the act of deglutition itself. It is only because the period of latent stimulation of these nerves is somewhat long that the respiration appears at all. "This interruption of respiration during deglutition is the most effective protection the body possesses against the dangers of swallowing the wrong way."

The second appendix is a polemic against Langendorff and Wertheimer, who, as is known, are among the chief supporters of the theory of spinal respiratory centres. Indeed, according to these authors, the spinal are the true motor centres, and the medul-

lary centre has only a regulative function. By numerous, and, apparently, conclusive experiments, Marckwald shows that this view is untenable, and he reasserts his belief that no spinal respiratory centres exist; that the sole centre is to be found in the medulla; that this is a reflex centre; and that, when separated from the vagi and brain tracts, and acting automatically, it can liberate only respiratory spasms, but no regular rhythmic respiratory movements.

The work concludes with a copious and valuable bibliography, arranged alphabetically, under the names of the authors.

In conclusion, we would say a word in praise of the translation, and congratulate Mr. Haig on the successful accomplishment of what must have been a laborious and difficult task.

Die Entzündung der peripheren Nerven (Polyneuritis—Neuritis multiplex) deren Pathologie und Behandlung. Von Dr. E. LEYDEN. Berlin. 1888. Mittler und Sohn. Pp. 42.

IN these lectures Professor Leyden gives, firstly, a sketch of the history of our knowledge of multiple neuritis, a disease which was first described by himself in 1879.

He classifies the cases of neuritis under five heads:—

1. *The Infectious form*, of which the best known variety is that which follows diphtheria. To this class also belongs the Japanese kakke, or beri-beri, and the paralyses which occur in syphilis, and some of those in cases of tuberculosis. Leyden thinks that in these cases the affection is not due to the presence of bacteria in the nerves, but that it is attributable to the action of some poison or ptomain produced by the bacteria, and having a peculiar affinity for certain nerves.

2. *The Toxic form*.—To this class belong the paralyses which occur in cases of lead-poisoning, as well as those which have been observed in cases of poisoning by arsenic, phosphorus, carbonic oxide, sulphide of carbon, and mercury, as well as some cases of neuritis which have followed subcutaneous injection of toxic substances—notably ether. To this class also belongs the important class of alcoholic paralysis.

3. *The Spontaneous form*, or those cases which follow exposure to cold, violent muscular exertion, or both combined.

4. *The Atrophic, Anæmic, Cachectic forms*, such as occur in pernicious anæmia, chlorosis, senile marasmus, tuberculosis, and diabetes.

A most interesting account of the forms of neuritis which are met with in diabetes is given.

5. *The Sensorial or Atactio form.*—It is now fully recognised that cases frequently occur which present, more or less completely, the symptoms of locomotor ataxy, and whose spinal cords present no discoverable lesions. In many of these changes of an inflammatory or degenerative nature have been found in the peripheral nerves. These cases of *nervo-tabes peripherica*, or *pseudo-tabes*, constitute Leyden's fifth class.

As to the anatomical changes which occur in the nerves in multiple neuritis, they are sometimes of a manifestly inflammatory kind, in other cases more of a degenerative nature, although the two lesions often shade into one another. The peripheral lesion is often unassociated with any discoverable spinal abnormality. Sometimes, however, changes are met with in the cord, but they are not of a kind to explain the symptoms, which evidently depend on the alterations in the nerve trunks.

The treatment recommended is chiefly expectant and hygienic. Violent remedies are strongly deprecated. Rest in bed is insisted on; strengthening diet, salicylic acid, antipyrin, and antifebrin, and the very cautious use of morphin, if pain is excessive. Electricity is useless or injurious in the early stages, but later the continuous current may be advantageously employed, together with massage, baths, and moderate exercise. The prognosis is in most cases favourable.

These lectures are written in the brilliant and attractive style which characterise all the works of Professor Leyden. They can hardly fail to advance our knowledge of a disease which, notwithstanding its commonness, has only recently received the recognition which it merits.

A Manual of General Pathology. Designed as an Introduction to the Practice of Medicine. By JOSEPH FRANK PAYNE, M.D.
London: Smith, Elder, & Co. 1888. Pp. 702.

THIS manual, intended as an introduction to general pathology, and general pathological anatomy, is divided into two parts. The first treats of the Processes of Disease, the second of the Causes of Disease. In the first we find such subjects dealt with as plethora and anæmia, disturbances of circulation, inflammation, fever, the different kinds of degeneration, tumours, and qualitative changes in

the blood. In the second part are considered the mechanical and physical causes of disease, poisons, chiefly ferments and animal poisons; and parasites, including bacteria. The chapters on bacteria give an admirable summary of the present condition of knowledge on the relations of these organisms to disease.

The book is one which supplies a great want in English medical literature, and which cannot fail to attain a wide popularity. While never wanting in accuracy, it is written in a lively, attractive style, and is illustrated by 153 engravings and a well-executed coloured plate. It is a work which in every respect we can most strongly recommend to our readers.

Die Entwicklung der Bacterienfärbung. Eine historisch-kritische Uebersicht. Von P. G. UNNA. Jena: Fischer. 1888. Pp. 80.

THE great advance in our knowledge of pathogenic and other bacteria which has been gained of late years is due very largely to improved methods of staining these organisms. These improved methods have been arrived at sometimes empirically, sometimes by the application of principles more or less correct. An attempt to classify and introduce order into these numerous methods, and to show on what their actions really depend, cannot but be valuable, and furnish a basis from which further advance may be made. No one is more competent to perform such a task thoroughly and successfully than Dr. Unna, who stands in the very foremost rank of histologists and bacteriologists, and whose numerous contributions to microscopical technick are so well known and so widely appreciated.

In the work before us he gives a most able and interesting historical and critical sketch of the present condition of the art of microscopical staining as applied to micro-organisms, and concludes with a classification of the different methods.

The primary division is into monochromatic and polychromatic, or staining in one colour or in several.

The monochromatic staining again is divided into direct and indirect. The former includes the method of staining, by a simple, very much diluted, solution of the colouring matter, and that in which the staining power of the dye is enfeebled by addition of such substances as acetic acid, alcohol, or glycerine.

The indirect staining is that commonly employed, in which an elective staining of the bacteria is effected by excessive action of

the dye, followed by gradual and regulated decolorisation. This decolorisation may be effected either by physical or by chemical agencies. To the former belong the methods by indifferent solvents—as alcohol, anilin, and those in which the attachment of the unaltered dye to the tissues is loosened by the action of oxidising means (as peroxide of hydrogen, permanganate of potassium), so that the decolorisation is more easily effected by alcohol.

In most cases of indirect decolorisation, however, it is chemical agencies which come into play. These may be divided into four categories. In all of these some substance is brought into contact with the stained tissues which has an affinity for the dye, and so extracts it from the tissue; or, as in the fourth category, changes the colouring matter into a new substance.

In the first category are placed those methods in which acids are employed for decolorising. The acids form a triple compound—tissue + saline dye-stuff + acid. According as the dye-stuff is firmly fixed in one part of the tissue, feebly in another, the result of subsequent washing with alcohol is different. In the former case the compound tissue + saline dye-stuff remains; in the other the acid combines with the dye to form a polyacid salt, which is extracted by the alcohol. In the one case the part (bacteria, nuclei, keratin) remains coloured; in the other (protoplasm, collagen) it is decolorised. Besides, acids act on the tissues themselves, causing shrinking of some parts as nuclei, swelling of others as collagen, and thus influencing their power of retaining the dye.

To the second category belong the methods in which the decolorisation is effected by saline solutions, as alkaline carbonates, ferric chloride, sodium hypochlorite, &c. Theoretically the process is here the same as in the case of the acids, only here double salts are formed instead of polyacid salts.

To the third category belong those methods in which iodine is used for decolorisation. The only dyes for which iodine possesses a strong affinity are the pararosanilines. This is so strong that the two are never again separated; but while, on subsequent washing with alcohol, the compound, tissue + pararosaniline + iodine, remains in the stained parts, from the decolorised parts the alcohol washes away pararosaniline + iodine. The well-known method of Gram, as well as others by Unna, Lütz, Weigert, &c., belong to this category.

To the fourth category belong those as yet few methods in which

a partial decolorisation of the pigment is effected by changing it into a leuco product by the agency of reducing means.

The second primary division includes the methods of polychromatic staining. This is subdivided into three categories.

The first, and simplest, consists in the staining of those parts of the tissue which, after primary staining, have undergone a maximal decolorisation, with some contrast dye which has the least possible affinity for those parts which have retained the primary colour

The second consists in replacing one colour by another in certain parts of the preparation, without previous decolorisation. Thus, Koch stained sections containing tubercle bacilli in methylene blue and then in vesuvin. This latter replaced the blue in all parts except the bacilli, which remained blue.

The third method consists in staining simultaneously in two dyes which have different affinities for the different elements. This method has as yet been but little practised, and has hitherto given less reliable results than the methods of successive staining. Gibbs' double stain for tubercle bacilli, so commonly practised in this country, belongs to this category.

The following table shows the different methods we have enumerated:—

Staining (with or without a mordant)	Monochromatic	Direct	...	1 In dilute solutions.
			2 In enfeebled solutions.	
		Indirect	Decolorisation by physical agents	3 By alcohol.
				4 By aniline.
			Decolorisation by chemical agents	5 By oxidising means and alcohol.
				6 By acids and alcohol.
	Polychromatic	Two or more suc- cessive stain- ings	7 By salts and alcohol.	
			8 By iodine and alcohol.	
		...	9 By reducing agents.	
			10 Contrast staining of decolorised parts of tissue.	
			11 Partial change of colour of tissue.	
			12 Simultaneous stain- ing.	

Curvatures of the Spine. By NOBLE SMITH. Second Edition.
London: Smith, Elder and Co.

MR. SMITH has issued a second and enlarged edition of his book on curvatures of the spine. It will be found essentially practical. He is not a believer in the use of apparatus in every case, but he very properly shows what important adjuncts are to be found in other forms of treatment. One lesson he impresses with much force—and in this we entirely concur—that cases of curvature are too often left to the instrument-maker which ought to be managed in every detail by the surgeon. The objection to the various “jackets” which are used is that they do not give protection against interference with the action of the muscles, or the development of the chests. He believes the correct principles in instrumental treatment are embodied in the invention of Mr. E. T. Chance, or in some modification of it. Upon this we will allow Mr. Smith to speak for himself:—

“The exact form of the instrument is perhaps of less importance than the principles of application, and I have improvised an apparatus by which these principles have been carried out when the perfect instrument has not been at hand. These principles may be described as follows:—The first object is to keep the spine in as upright a position as possible in an antero-posterior direction, for as it is a well-known fact that flexion (stooping) increases the deformity, and especially increases the rotation of the vertebræ, on the other hand, extension (uprightness) lessens the deformity. To effect this object patients are often made to lie down, or rest in chairs, which fit into the lumbar curve, and so support the spine in a good position. Instruments usually fail to a great extent in this respect because they depend upon crutches for propping up the body, and crutches would have to be very high and painful, as well as detrimental in other ways, if they kept the spine sufficiently upright. The means by which this purpose can be effected is the use of shoulder straps which act from before backwards, and not from below upwards. In weak backs the tendency is for the spine to bulge back in the lower dorsal and lumbar regions, and it is certainly desirable to control this projection. Instruments, as usually made, either leave this part unsupported, or they curve into the hollow and act as permanent supports. The tendency of such machines is to relieve the muscles of the back from action and to conduce to their degeneration and ultimate weakness.

“To overcome this evil effect I discard rigid stays and restraining spinal instruments (including felt and other jackets) and arrange the

light support above referred to, so that a small pad is placed opposite the lumbar region to restrain the back from curving posteriorly. In slight cases it will be observed that when the patient stands erect the back is straight, or nearly so, and the natural lumbar curve is formed. When, however, the patient sits down, the spine immediately bows backwards, and the lateral curve takes place. If we can prevent this bowing backwards we retard the increase of, or remove, the lateral curve. The pad is so arranged that it does not act when the patient is holding herself erect—when in fact it is not wanted—and so the dorsal muscles are allowed to act, but directly the spine is allowed to subside, then the pad comes in contact with the back and prevents it from bulging any further. As the case proceeds this pad is gradually brought nearer to the natural position of the spine, and thus a back which at first protruded very considerably is brought gradually into a natural position. Never, however, is the pad placed so forward that it retains the spine in one position; on the contrary there is always room for action of the muscles.

“The result of this plan of treatment is that patients with backs so weak that they cannot sit upright for more than a moment, will, in a very short time—say a month, or in even less time—show a very decided increase in power. Backs which have been quite flabby to the touch have become hard and muscular in a few months. The apparatus should be put on the first thing in the morning and not taken off until the patient retires to bed.”

The book also contains Mr. Blaikie's rules for training children in muscular exercises. They form a most valuable addition.

On Diabetes and its connection with Heart Disease. By JACQUES MAYER, M.D. London: Churchill. 1888. Pp. 57.

FROM his large experience at Carlsbad, and from an examination of the pathological registries at Berlin, the author is led to the belief that heart disease is much more common in cases of diabetes than has hitherto been supposed. He believes “that in a considerable number of cases of diabetes hypertrophy and dilatation of the heart become developed without there being any morbid changes in other organs, such as the kidneys, arteries, &c., which so frequently lead to these affections. If we now come to consider to which noxious influences these morbid changes in the structure of the heart are due, it seems most plausible to assume that they are owing to chemical irritation of the heart by certain matters circulating in the blood, and these matters can only be sugar and urea. . . .

I therefore consider that the forms of heart disease which occur in diabetes are owing to the circumstance that the kidneys are unable after a time, to continue the excessive efforts which they have been called upon to make; that their compensating functional activity gradually decreases, and that this leads to increased cardiac action, hypertrophy, and dilatation."

Clinical Lectures on Important Symptoms. By THOMAS GRAINGER STEWART, M.D. Fasciculus II. On Albuminuria. Edinburgh: Bell & Bradfute. 1888. Pp. 250.

IN the first lecture of this volume the different kinds of albumen met with in the urine are described, and experiments are detailed, which are intended to show the relative delicacy of the tests usually employed to determine the presence or absence of albuminuria. It was found that picric acid was of all tests the most sensitive, showing 0·00015 per cent. of serum albumen; while the other tests gave an indication only when the quantity was 0·0003 per cent.; and cold nitric acid only when there was present 0·003 per cent. For quantitative estimation Esbach's method was found satisfactory.

In the second lecture observations on the occurrence of albuminuria in healthy persons are given. It was found that albumen is not a normal constituent of urine, but is present in about one-third of all healthy persons, while it is more frequently met with in very early infancy; that after this period its frequency increases with age; that while violent exercise tends to induce albuminuria or increase it if present before, moderate exercise rather diminishes it; that the taking of food, chiefly breakfast, often induces albuminuria, as does cold bathing and playing on wind instruments.

In the third lecture the occurrence of albuminuria in diseased persons is considered. It is shown that while Bright's disease accounts for more than any other cause, yet that less than half the cases of albuminuria met with in practice are due to this condition. Next to cases of Bright's disease in frequency are cases of cardiac and other diseases affecting the circulation, and cases in which blood, pus, &c., are accidentally mixed with the urine. Cases of functional albuminuria are rare.

As a result of a discussion of the immediate cause of albuminuria Professor Stewart says:—"I would have you believe that albuminuria is very often due to changes of an inflammatory character in the epithelium of the tubules and in the stroma of the organ, and

that in a very large proportion of the cases in which it occurs in practice it is dependent upon this cause; that increased blood-pressure is a factor of some importance; that increased permeability of the filtering apparatus induces it in many instances; and that there may be some conditions of the blood which account for it or favour its occurrence."

In the following lectures an account is given of the three forms of Bright's disease still maintained as distinct by the author and many other pathologists—namely, parenchymatous nephritis, cirrhosis of the kidneys, and amyloid degeneration of the kidneys. The subject is treated for the most part clinically, several cases being recorded.

After a lecture on febrile albuminuria and that associated with disease of the circulatory, digestive, and nervous systems, as well as that complicating glycosuria, the subject of functional albuminuria is treated in the eleventh lecture. Having discussed the literature of this form of albuminuria, the cases are divided into four categories—viz., paroxysmal albuminuria, dietetic albuminuria, albuminuria from muscular exertion, and simple persistent albuminuria. In these cases prognosis is difficult and important. Professor Stewart thinks that in the cases of the first category there is some tendency to pass into organic renal disease. This is less likely in those of the second and third category; while in those of the fourth category the prognosis is rather unfavourable.

Passing over lectures on accidental albuminuria and on diagnosis and prognosis, we come to the two last, which are on treatment. As regards the production of albuminuria by diet, the author finds from his own experiments that the addition of several raw eggs to an ordinary diet has a tendency to induce this condition, but that the quantity of albumen passed is small, that it disappears when the eggs are discontinued, and that the albumen contained in the urine is serum albumen, not egg albumen, as occurs when the egg albumen is injected into the vessels. Cheese he found to have no effect in causing albuminuria, while walnuts had. For cases of parenchymatous nephritis a low diet, consisting mainly of milk, is recommended; in cases of cirrhosis the diet is less important; while in cases of waxy kidney the diet should be as nutritious as the patient can bear.

As to drugs, it would seem that there are none which directly diminish the discharge of albumen. Digitalis, pilocarpin, purgatives in cases where the dropsy is excessive are recommended, and iron

in more chronic cases. There is not much that is new in the medicinal treatment here detailed, nor do we find that there is much hope held out for cases where the albuminuria depends on organic renal disease.

The Localisation of the Lesions of Phthisis in relation to Diagnosis and Prognosis. By J. KINGSTON FOWLER, M.A., M.D. London: Churchill. 1888. Pp. 31.

IN this paper Dr. Fowler attempts to show that the tubercular process in the majority of cases of chronic phthisis follows a definite course, or "line of march," from the apex to the base of the lung. He rightly maintains that if such regularity in the extension of the disease exists, its knowledge may be useful in forming both a diagnosis and a prognosis in individual instances.

The primary lesion is rarely situated in the very apex of the lung, but most commonly an inch or an inch and a half below the summit and nearer the posterior and external borders. Such lesions tend to spread backwards, and hence physical signs are often first discoverable in the supra-spinous fossa. From this the lesions extend downwards along the anterior aspect of the upper lobe, three-fourths of an inch within its margin. Less usually the primary lesion occurs at a point corresponding with the first and second interspaces below the outer third of the clavicle, and from this extends downwards.

The middle lobe of the right lung is seldom if ever primarily affected. It becomes involved after the corresponding upper lobe, usually at a rather late period, while it sometimes escapes altogether.

The lower lobe of the lung, in whose apex is situated the primary lesion, is usually involved at a very early period, prior to the infection of the opposite apex. The usual site is about an inch below the upper and posterior extremity of the apex of the lower lobe, and about the same distance from its posterior border, corresponding to the fifth dorsal spine, midway between the border of the scapula and the spinous processes.

When the disease extends to the opposite lung it usually occupies either of the common situations in the upper lobe. But sometimes it occurs close to the interlobular septum, about midway between its upper and lower extremities, and corresponds on the chest-wall to the upper part of the axilla. From this it tends to spread

laterally inwards and upwards. The extension in the lower lobe of the lung secondarily affected is similar to that in the primarily engaged lung.

While the lesions usually extend from the upper to the lower lobe of one side before the opposite lung is engaged, this rule is sometimes departed from, and a crossed infection of the lower lobe occurs—that is, the disease advances from one upper lobe to the lower lobe of the opposite lung before attacking the lower lobe of the first lung.

While in chronic cases, in which the extension takes place by inhalation of the virus along the bronchi, the rules given above are followed, in more acute cases, in which extension occurs through the blood and lymph, the regular line of march is often departed from. For an account of these irregularities, and for some valuable remarks on basic lesions, tubercular and non-tubercular, we must refer to the original work.

While fully admitting the value of the investigations given here by Dr. Fowler, we doubt if they will prove of much value in diagnosis. As the author says—"By a prolonged experience in the making of autopsies one becomes impressed with the fallacies attendant upon physical diagnosis." We have in our hands an easy means of diagnosis in the microscopic examination of the sputum. This will in most cases serve to clear up the nature of a doubtful case long before its recognition would be possible if we were confined merely to tracing, by physical examination, the disease in its course downwards through the lung.

The Applied Anatomy of the Nervous System: being a Study of this Portion of the Human Body from a standpoint of its General Interest and Practical Utility in Diagnosis. Designed for use as a Text-book and a Work of Reference. By AMBROSE L. RANNEY, A.M., M.D. Second Edition. Re-written, enlarged, and profusely illustrated. London: H. K. Lewis. 1888. Pp. 791.

SINCE the publication of the first edition of this book in 1881 our knowledge of the anatomy and physiology of the nervous system has made considerable advance—this is true specially of the brain—and has led to a corresponding improvement in the diagnosis and treatment of the diseases of this part.

In the present edition Dr. Ranney has spared no pains in bring-

ing his work fully up to the level of the existing condition of science. While the general plan of the book remains unaltered, we find on every page such evidences of revision that the work may be looked on as a new one. The chapter on the brain is entirely re-written. The volume contains nearly 300 additional pages of text and nearly 60 additional illustrations, while many of the old figures are replaced by new and better ones.

The book is one whose usefulness is now well recognised, and in its greatly improved form it cannot fail to enjoy even a greater popularity than did the first edition.

Beiträge zur pathologischen Anatomie und Physiologie. Herausgegeben von DR. ERNST ZIEGLER und DR. C. NAUWERCK. Zweiter Band. Drittes Heft. Jena: Fischer. 1888.

THIS number of the *Beiträge* shows no falling off from the high standard of excellence which we have on more than one occasion noticed in former numbers. It contains the following papers:—

I. "An Experimental Examination of the Action of Arsenic and Phosphorus on the Liver and Kidneys," by Ziegler and Obolensky. Small and repeated doses of arsenic given to rabbits either by the mouth or by subcutaneous injection caused in the liver an accumulation of small fat drops in the hepatic cells; the cells also presented a vacuolated condition, and the nucleus was often atrophied or invisible. In Kupffer's stellate cells and the intra-acinose capillaries fatty drops were also seen. Besides these regressive changes, evidence of multiplication was found in the hepatic cells, nuclei of the capillaries, and in the periportal connective tissue.

In the dog the changes were of a less degree, and limited to fatty accumulation in the cells.

Both in dogs and rabbits the changes in the kidney were much less marked than those in the liver, but were similar in kind.

In poisoning by phosphorus the appearances are similar to those in arsenic poisoning, but the degenerative changes are more marked. The results do not throw any light on the causation of hepatic cirrhosis in man.

II. "A Second Contribution to the Pathological Anatomy of Leprosy," by Sudakewitsch. In this paper Dr. Sudakewitsch describes the changes in the Pacinian corpuscles of the hand. He

finds some simply atrophic and not containing bacilli. Others contain numerous bacilli. In the early stages the nuclei of the endothelial plates and of the perivascular cells are increased. Later, in the central part of the corpuscle and between the lamellæ, granulation-cells are accumulated to such a degree as finally to destroy the nerve fibre, and completely to alter the structure of the corpuscle. The author thinks that the changes in the nerves are not primary, but are due to the invasion of the corpuscles by the lepra bacilli.

III. "On the question of Infantile Osteomalacia." Dr. Adolf Hermann describes a case which in most respects resembled closely those which were published some years ago by Rehn, and which have been very generally admitted as proving that an infantile osteomalacia, distinct from rachitis, occurs. Hermann, however, comes to the conclusion that his case was only one of extreme rickets, and he thinks that the real nature of Rehn's cases is doubtful, as is the question whether osteomalacia ever occurs in infants.

IV. "Contribution to the Pathological Anatomy of Mammary Tumours." Dr. Edmund Leser describes, firstly, a large osteochondroma of the breast, removed from a woman, aged sixty-seven. This is a rare form of tumour in the human subject, and there would appear to be no other instance on record in which the calcification and ossification of the cartilage was so advanced as in this case.

Secondly, he describes six tumours, which all resembled one another pretty closely. In all, the growth started from the epithelium of the normal glandular tissue, and gave rise to cysts, into which a papillary growth took place. There was no extensive connective tissue growth between the cysts, nor any proliferation of a sarcomatous nature. Hence, these tumours cannot be classed as cystic sarcomata. It is proposed to call them "Adeno-cystoma papilliferum epitheliale mammæ." They arise usually without apparent cause, late in life; grow slowly and painlessly, and show little tendency to recur after removal, or to cause secondary infection of the lymphatic glands, or of distant parts.

Thirdly, seven cases of adenoma of the breast are described and classified, and the resemblances and differences between this class of tumours and the epithelial cystomata are clearly pointed out.

VI. "Experimental Observations on the Invasion of Pathogenic Micro-organisms from the Lungs and Air Passages." By Gustav Hildebrandt. This is an essay to which a prize was awarded by the

medical faculty of the University of Königsberg. The following are the conclusions at which the author arrives:—

1. The microbes which are contained in the breathing air do not pass unhindered into the deeper air passages and lungs; but are, under normal circumstances, practically altogether held back by the nasal passages.

2. Those microbes which reach the alveoli experience no resistance, but pass without difficulty into the tissue of the lungs.

3. Only certain bacteria (*e.g.*, that of rabbit septicæmia) find in the pulmonary tissue suitable conditions for their growth and multiplication; the greater number die (*e.g.*, *aspergillus fumigatus*. B. anthracis.)

4. Hence, while the possibility of a blood infection through the lungs exists for some bacteria, it is impossible in the case of other, even very malignant, species.

VII. "Abstracts by Ziegler and Nauwerck of Twenty Dissertations worked out in the Pathological Institute at Tübingen during the years 1882 to 1887." Some of these have been already published in the *Beiträge* and noticed in these pages. Many others are of great interest, and they all demonstrate the great activity of the department so ably directed by Professor Ziegler.

The papers in this number are illustrated by five lithographic plates, besides engravings in the text.

Anatomische, physiologische, und physikalische Daten und Tabellen zum Gebrauch für Mediciner. Von DR. HERMANN VIERORDT. Jena: Fischer. 1888. Pp. 303.

THIS remarkable book is divided into three parts—anatomical, physiological, and physical.

In the first part are given the dimensions, weight, specific gravity, &c., of every part of the body, with tables showing the proportions between the right and left halves of the body, between the two sexes, and the size and weight of the foetus at different periods of intra-uterine life.

In the physiological part are given data concerning all the functions of the body and tables of mortality.

In the third part are tables dealing with such subjects as thermometer scales, specific gravity of many important substances, density and volume of water at different temperatures, wave lengths

and intensity of light in different parts of the spectrum, electrical measurements, and many others.

In an appendix are given tables on subjects connected with practical medicine, such as the elevation of the most important health-resorts, the times of incubation of febrile diseases, the doses of medicines, measurements of sounds, bougies, &c.

The numbers all seem to have been got from the best sources, and the tables are put together with great care and judgment. It would be difficult to realise the amount of labour which must have been expended on the compilation of this book, and its value can hardly be over-estimated. To anyone who wants frequently to have exact measurements of anatomical and physiological quantities the work will be almost indispensable, since there is no other of its kind in existence.

The Principles of Cancer and Tumour Formation. By W. ROGER WILLIAMS, F.R.C.S. London: John Bale & Sons. 1888. Pp. 194.

THIS volume is intended to be the first instalment of a large and comprehensive work on the pathology of cancer and tumour formation, which is to be completed in six parts.

The present part is mainly of a theoretical and speculative character, the leading idea being the similarity or identity of the processes in normal growth and development and those occurring in tumour formation. It would be impossible for us within the space at our disposal to attempt to follow the author through his argument, but we can recommend the work to all those who are interested in general pathology. It will be found an agreeably and clearly written attempt to give a scientific basis to a very obscure and difficult subject.

ABSENCE OF CLAVICLES.

DR. TODD stated, at a meeting of the St. Louis Medico-Chirurgical Society, that in the dissecting-room had been found a subject without clavicles. Rudiments of the clavicle were attached to the acromion process and the sternum; but the intermediate part was entirely gone. There was nothing but a fibrous cord to represent the clavicle.—*St. Louis Courier of Medicine*, April, 1888.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—ROBERT M'DONNELL, M.D., F.R.S.
General Secretary—W. THOMSON, M.D.

SECTION OF PATHOLOGY.

President—C. B. BALL, M.D.
Secretary—J. B. STORY, F.R.C.S.I.

Friday, March 23, 1888.

DR. GORDON in the Chair.

Carcinoma of Liver.

DR. WALTER SMYTH exhibited a specimen of carcinoma of the liver, from a woman, aged thirty-five. Three months before admission to hospital she complained of dull pain in the right side, and posteriorly. In about a month jaundice supervened, increased from day to day, and lasted until her death. At first she vomited, but not subsequently. The motions were white, and the urine was free from albumen, and not very deeply tinged with bile. No increase in the size of the liver could be detected, and there was no ascites until within a few weeks of her death. While in hospital she emaciated rapidly, and later on she vomited blood on several occasions, cedema of the legs and ascites developed, and she died about six weeks after admission. During nearly the whole of her illness the temperature was above normal—on one occasion as high as 102°.

Post mortem.—No diffuse peritonitis, spleen adherent, liver not materially enlarged. On upper surface of left lobe a cancerous node about size of a florin, and numerous other prominences, some of them cupped, on upper surface of right lobe; a few nodules on lower surface. The gall-bladder presented itself as a hard, pyriform tumour, and upon incision its coats were found to be greatly thickened and calcified, except at the

fundus. It contained some white gall-stones, and a yellow, grumous pulp composed of cholesterin. Cystic and hepatic ducts enormously dilated. Pancreas adherent to liver, and fused into a mass along with enlarged glands. Kidneys healthy; no disease of stomach. Microscopically, a polygonal-celled carcinoma.

The CHAIRMAN said it was rather an unusual circumstance to have so much malignant disease without a good deal of enlargement of the liver, and from that peculiarity arose the question whether it was not originally a case of cirrhosis of the liver, in which carcinoma supervened. A most interesting fact was the absence of any disease of the stomach, from which carcinomatous disease so often progressed. In cases of cirrhosis there was, he held, generally speaking, rather an absence of jaundice; and the fact of jaundice occurring would be rather indicative of malignant disease of the liver than of cirrhosis. Had Dr. Purser any reason to think that in the interior of the organ there was any cirrhosis?

DR. SMITH replied in the negative.

DR. NIXON asked was there any disease of the retro-peritoneal gland?

DR. SMITH said the mesenteric glands were enlarged.

DR. O'CARROLL mentioned a case which, during eleven months, presented all the signs of continued enteritis, the number of motions having gradually increased to something like twenty a day, while they varied between fifteen and twenty-five during the last five or six months of the patient's illness. The motions came on very suddenly, and were fluid and foetid. The patient never had any jaundice, save a passing tinge in the conjunctivæ during some two or three days, which was merely suggestive of it. He had no ascites or vomiting, and it was more or less constantly a question whether there was any hepatic trouble whatever. The symptoms always pointed to enteric trouble. He arrived at a diagnosis in the case rather by the exclusion of other diagnoses than from the actual symptoms, and that diagnosis was afterwards confirmed by the *post-mortem* examination—namely, encephaloid disease. The liver was found to be simply a mass of more or less encephaloid tumours, which had crushed out all the normal liver tissue. The cancer was primarily in the liver, as far as he was able to make out, for he found no trace of any other tumour in the abdomen. Dr. Nixon, who assisted him in the case, would remember it.

DR. NIXON said he could confirm all that Dr. O'Carroll had stated about the case. The symptoms during life were those of intestinal irritation, and it seemed afterwards that that was an irritation reflected from the cancerous disease of the liver.

Acute Pulmonary Tuberculosis.

DR. C. J. NIXON exhibited the lungs of a man, aged twenty-nine years, who died after an illness of five weeks, in which a deposition of milary tubercle was distributed uniformly throughout both organs. There were

at the bases two centres of caseous transformation of recent formation, and evidently secondary to the tubercular deposition—the apices of the lungs presented no traces of old-standing disease. There was neither enlargement nor caseation of the bronchial glands. The patient had been in good health five weeks before his death, when he was seized with a shivering fit. He became feverish, and gradually developed symptoms of gastro-enteric disturbance, which led to his being treated outside the hospital as a case of enteric fever. The chief symptoms during the progress of the case were high temperature without any marked depression; dyspnœa with greatly increased respiratory rate, the respiration averaging 48 in the minute; marked cyanosis, especially about the finger nails and alæ of nose; a pulse varying between 132 and 148; tendency to profuse sweating; tongue clean and red. The physical signs on examination of the chest were minute crepitating râles, heard best at bases of lungs, but before death extending over the entire of both lungs; occasional friction sound heard posteriorly; no alteration of sound on percussion. From these symptoms the diagnosis of pulmonary tuberculosis was made. Dr. Nixon dwelt upon the view that had been urged of acute primary tuberculosis being a disease of an acute infectious nature, but held that the discovery of Koch, showing that the bacillus tuberculosis was present in all forms of the disease, negatived the view that acute tuberculosis had any special entity. A brief reference was made to the extension of bovine tuberculosis to man.

DR. M'KEE said it was to be regretted that Dr. Nixon had not been able to make a more extended *post mortem*. He had raised the question as to the date of the acute tuberculosis. He (Dr. M'Kee) thought that in almost all cases of tuberculosis—even the most acute—it would be found that there had been some old focus of the disease in the body. He did not notice whether Dr. Nixon had stated that there was any such focus in the lungs; but any little experience he had of such cases went to show that the acutest forms of tuberculosis were inoculated from some focus of caseous matter in the body. That would seem probable, *à priori*, when they remembered that in even the weakest constitutions there was some resisting power to the invasion of the *Bacillus tuberculosis*. Therefore, before the acute tuberculosis could be produced it was necessary that the poison should be conveyed into the system in a large quantity. That, of course, might take place through a repetition of small doses. If he was not mistaken, it was held that the presence of a caseous focus such as he spoke of was invariable in such cases. Hereditary cases, as far as he knew, were much earlier in their development than non-hereditary. The age of the patient in the present case was very early for a non-hereditary example, and he would like to ask whether this man was the eldest of his family or not?

DR. NIXON, in reply, said he did not ascertain whether the man was

the eldest of his family or not. The point raised by Dr. M'Kee was an important one. He stated the view of Buhl, who regarded tuberculosis as the inoculation of caseous matter in the system. Two or three years ago he had an opportunity of making a complete examination of a case of acute tuberculosis which occurred in a rider in Hengler's circus—a very strong robust man. The conditions presented in his lungs were exactly the same as in the present case, for he found no evidence of caseation on any part of the body. In the present case there was no evidence whatever of caseation in the bronchial glands. There was caseation in two or three places at the base of the lungs, but it was an acute caseation brought about by the clustering of the tubercles; and in one of those centres the caseation was evidently a recent production, and the lung was broken down. There was only the one centre where there was the excavation. He did not think that in this case there was anything to point specially to an old caseous deposit. The man had no enlargement of the glands. He said he had enjoyed a healthy life, and there was no reason to think that he was the subject of any old-standing disease. But that could be thoroughly cleared up only by a much fuller *post-mortem* examination than he (Dr. Nixon) had been able to make.

Chronic Bright's Disease.

DR. JAMES LITTLE submitted the following case of chronic Bright's disease. The kidneys on the table were the largest he had ever met with. The two weighed rather more than $2\frac{1}{2}$ lbs. Dr. Hilton Fagge mentioned a pair shown by Moxon which weighed within a quarter of an ounce of 3 lbs. The man from whom the kidneys now before them were taken was thirty-eight years of age at his death. Thirteen years previously he spent several nights in looking for wild fowl on the North Bull, the result of which was that he got an attack of acute nephritis. Afterwards he came under his (Dr. Little's) care in the Adelaide Hospital for acute renal dropsy. He did not know whether it was justifiable to connect the state of his kidneys at the time of his death with that past illness, because they all knew that acute nephritis usually ended either in death or in a complete cure; and the man appeared to have recovered from that former illness. After five or six years he became subject to winter cough, of which he had attacks every year; but these were never severe enough to oblige him to seek hospital relief until the winter of 1886-7. He then came under his care for dropsy and general bronchial catarrh, his urine being markedly albuminous. After being four or five weeks in hospital he went home apparently quite well. There was no record as to whether his urine was free from albumen at the time he left the hospital; but the man himself said that he heard the clerk who had charge of his case say that it was entirely free from albumen before he went away. The matter was one of consequence, because an important

point in the case was as to the age of the renal changes that were found after death. About three months ago he came again to the hospital. He had been ill for two or three months previously, but was unwilling to leave his shop. When he came into the hospital he was extremely dropsical, and his limbs were very anasarctous. The parietes of the abdomen and the loins were very dropsical, and even his upper extremities were more or less so. He was also in a state of intense dyspnoea, and for the first few weeks could not lie down, but had to be propped up in an arm-chair. At that time he generally passed per day between 30 and 40 ounces of urine, which was always highly albuminous, and had a specific gravity of 1012. He was told that a few hyaline casts were once or twice found in it, but he did not see them. The diagnosis made was that he had some chronic form of Bright's disease, with general bronchial catarrh. His pulse was always exceedingly soft and weak, his heart sounds very feeble. There was no evidence of the cardio-vascular changes that were found in some forms of Bright's disease. He fought off death for more than two months, in hospital; and the day before he died he appeared as if he might recover. The dropsy had considerably diminished, and he was able to lie down in bed. Besides having a cough and spitting up a great deal of purulent matter, and being dropsical, his urine became more and more scanty during his stay in the hospital; and he had every now and then violent attacks of spontaneous looseness of the bowels, after which he always seemed to be more comfortable. On the day of his death he awoke in the morning, after a fair night's rest, with a violent pain low down in his left side. He remained in great suffering during the day, and died in the middle of that night. On a *post mortem* the cause of intense pain was found to be, as they had guessed, acute pleurisy affecting a small portion of the lower lobe of the left lung. It was also found that, in addition to general catarrh with highly emphysematous lungs, he had small cavities in both lungs, and miliary tubercles all through them. His case, as far as the lungs were concerned, illustrated an observation of the late Sir Dominic Corrigan that phthisis complicated with emphysema was most difficult of diagnosis, but most hopeful of treatment. In the lower lobe of this man's left lung was a little nest of softening tubercle, and just close to it was the portion affected with pleurisy, and though there was no perforation, yet he thought it was the nest of tubercle which determined the point of selection of the pleurisy. His heart weighed 9 ounces, and was soft and flaccid, presenting no sign of cardiac enlargement. The kidneys had somewhat lost the appearance which they presented when taken out. One of them weighed 19 ounces and the other 21½. They were smooth and rather pale on the surface; the capsules peeled off very readily; and, when each kidney was divided, the cortical portion was of a dull, yellowish-white colour, and the pyramidal portion had a vivid red staining. The question

was, were these kidneys affected by parenchymatous nephritis since the affection of thirteen years previously. All their knowledge, however, forbade such a conclusion. They must conclude that the last disease was of about a year's duration. A microscopic examination had been made by Dr. Bewley, who would state the result of it. The kidneys showed distinct evidence of amyloid change, which was mostly the case with these large kidneys.

DR. BEWLEY said the kidneys were an example of chronic Bright's disease, every constituent part of the organ being more or less affected. The renal tubes were in some places dilated, and in others diminished; and the epithelium was in most parts fatty, and in many parts low and with jagged edges. The connective tissue was increased in several places, but not to any great extent. The glomeruli were a good deal diseased, being the parts chiefly affected by the amyloid change. The vessels were also affected by amyloid change. The spleen, with its veins, arteries, and capillaries, was affected in the same way; and the Malpighian bodies were also similarly affected.

The CHAIRMAN remarked that the absence of cardiac pain indicated that the disease was not of very long standing.

Case of Cerebral Hæmorrhage.

DR. JAMES LITTLE submitted a case of cerebral hæmorrhage. About three weeks ago, a man, forty-five years of age, was admitted into the Adelaide Hospital in an apparently unconscious state. The story told of him was that, about a week before, he had a violent fit of convulsions, after which he remained in a more or less stupid and confused state in bed. Two days before his admission he had another fit, and then he was brought to the hospital. When we first saw him he was lying in bed with his eyes open, the pupils being equal in size, but moderately dilated. If spoken to, he made some attempt to answer, but could not speak; but when a little drink was offered to him he swallowed it. He could move both arms and legs perfectly, and there was no sign of paralysis of any of the facial muscles, eyes, or cranial nerves. The only thing of that kind occasionally observable was a very slight twitching of the left angle of the mouth, and of the left occipito-frontalis muscle. On examining his reflexes, they found the knee-jerk extremely well marked in both lower extremities, and also developed in as high a degree as he had ever seen the phenomenon known as ankle clonus. On listening over the heart, they perceived a deficiency in the first sound, and also a well-marked systolic muscular murmur. He (Dr. Little) concluded that he had to deal with a case of uræmic convulsions, judging by the pulse and cardiac action. His urine had been passed involuntarily in bed; and, by means of a catheter, a few ounces were drawn off, which were found to be rather highly coloured and densely albuminous. He was carefully observed from

that time until his death, and it was noticed that he had no hemiplegia, but moved his arms and legs on both sides; and, beyond the twitchings of the corner of the mouth and of the occipito-frontalis muscle, there were no indications of paralysis. Early the following morning the man jumped out of bed, put his hand to his head, and went into a violent fit of convulsions, in which he died. On a *post mortem* the diagnosis made was verified so far as the kidneys were concerned. His kidneys contrasted with those in the last case, being in a shrivelled condition, one a little less and the other a little more than three ounces in weight. The capsules were thickened, and when peeled off left a rough granular surface, the organs being good specimens of the small red kidney. The heart showed very distinctly hypertrophy of the left ventricle; and if there were such an affection as concentrative hypertrophy it existed here. The walls also were very much thickened. They looked out for the cause of the muscular murmur, but found nothing to account for it. In most of the cases he had examined, in which such a murmur existed during life, some very distinct cause had been found for it. The whole arterial system was very much diseased. A portion of the aorta showed in a very highly-marked form the changes that used to be called atheroma, but which were now called endarteritis deformans. The circle of Willis at the base of the brain was the seat of patches of similar change. On the right side of the brain was an enormous hæmorrhage, the right lateral ventricle being full of blood, and the hæmorrhage appeared to have taken place in the frontal lobe just outside the right lateral ventricle. There had evidently been two hæmorrhages, viz., one that must have occurred at the time of the seizure a week previous to his admission, and a second one that, he presumed, occurred at the moment of his death. There was a clot, which had the appearance of being a week or ten days old, and there was also a large quantity of what appeared to be recently poured-out blood. Another proof—which was most distinct when the specimen was recent—that there had been hæmorrhage eight or ten days previous to his death was that the brain tissue all round where the clot was had the peculiar softened amber hue that was seen in brain that had been stained by inflammatory changes succeeded by hæmorrhage. The case was of great interest in two or three ways. The man had been a soldier, and a very hard drinker at one time of his life. The case presented a specimen of a chronic form of Bright's disease, occurring in a person of intemperate habits, and accompanied with the cardiac vascular changes that were conspicuously absent in the preceding case. It was also an admirable example of atheromatous changes in both the larger and smaller vessels, and a point of great interest was the large cerebral hæmorrhage unaccompanied by paralysis.

DR. NIXON asked was any examination made of the vessels of the brain in order to ascertain where the hæmorrhage came from?

DR. LITTLE.—No.

DR. NIXON observed that the chief points of interest were—first, from what vessel the enormous hæmorrhage came; and secondly, at what time it took place. He believed that most of the hæmorrhage now seen in the specimen must have occurred at the time of the final convulsion. It was impossible to imagine that such an amount of blood should not have exerted some pressure on the motor-sensory tracts, so as to produce hemianæsthesia or hemiplegia. So far as he could make out from the specimen now, the hæmorrhage seemed to have come from the posterior lenticulo-optic artery; and that was just the situation where there would have been the least amount of pressure on the motor part of the internal capsule. A small hæmorrhage might have occurred there for some days without its being attended by any paralytic phenomena; but at the time the man sprang out of bed in convulsions there was most likely a disturbance of the clot, followed by the fresh hæmorrhage, and large amount of blood now visible, which could not possibly have existed previously during the man's life without producing paralytic phenomena. He thought Dr. Little's diagnosis on the whole correct, and that the first seizure the man got was uræmic.

Corneal Tumour.

MR. STORY exhibited, jointly with MR. J. A. SCOTT, a corneal tumour. It was removed from the eye of a boy sixteen or seventeen years old, about ten days ago. About four years previously the lad had been in St. Mark's Hospital, under his care, and the growth in the cornea was then in exactly the same state as it was when recently removed. It was a small opaque, yellowish white body, situated at the upper margin of the cornea, of oval shape, of five or six millimetres in its long diameter, and three or four in its transverse. The colour was somewhat the same as that of the Meibomian glands when seen through the conjunctiva. The tumour was vascular, as blood vessels could be seen running up to it and over its surface. It occupied nearly the whole thickness of the cornea, reaching from the anterior coat to the posterior surface.

The epithelium of the cornea ran smoothly over the tumour, which was not the least raised above the surface of the cornea. He removed only a portion of it, because he believed that if he had removed the whole he would have gone into the anterior chamber, and done a considerable amount of mischief. He removed it only for two reasons, one being the urgent solicitation of the boy, who wanted to get rid of it, and the other being curiosity to see what it was. There was no history of injury or inflammation; but the boy was a Union patient, and it was impossible to get a history in such cases.

MR. J. A. SCOTT said the specimen when examined under a high power practically represented the whole of the cornea. Under the conjunctiva

there was a mass of undoubtedly fibrous tissue, containing a quantity of small round cells; and this had a very large supply of blood-vessels. In one of the specimens seen under a high power, the supply of round cells was greater than in the rest, so much so that if that specimen alone were looked at, they would think the structure more like sarcoma than anything else. However, it was properly not sarcoma from the way in which those round cells joined the fibrous tissue. The fibrous tissue could be seen forming under the conjunctiva, and passing between the epithelium and the fibres of the cornea proper. It did not seem to press the corneal fibres away, but worked it between them and supplanted them. There was nothing to show that the cornea had been thickened. It was very difficult to make out how the fibrous tissue came there. It might have been either a cicatrix from an old ulcer or an old pannus.

MR. A. H. BENSON remarked that Mr. Story had omitted to describe the condition of the rest of the cornea, which was vascular, as if there were pannus all over the upper margin as well as immediately round the tumour, the latter being at the same time sharply defined from the neighbouring cornea. In the case of a somewhat similar corneal tumour, which he brought before the Section last year, the tumour, which was present in the cornea, was entirely removed from the sclerotic border, and there were no blood-vessels running into it, or any evidence of blood-vessels having ever gone into its neighbourhood. The pannus theory would, therefore, not apply to this case. The growth would rather seem to be a hyperplasm of the corneal tissue itself.

MR. STORY, in reply, said the tumour in Mr. Benson's case was almost in the centre of the cornea, and there was a perfectly clear cornea between it and the sclerotic. In the present case the tumour was situated at the junction between the cornea and the sclerotic. He should have mentioned what Mr. Benson had called attention to—namely, the presence of blood-vessels along other portions of the cornea. The case was one in which there had been at one time granular ophthalmia, but not of a very severe character. He had come into the hospital for the state of his other eye, which had entropium consequent on the granular ophthalmia. The slice which he took off the tumour occupied nearly the whole surface of it, but did not go through to the posterior surface of it, except in particular places, and there was left a circular depression in the tumour as if a little piece of it had been scooped out. The way in which the healing progressed was remarkable. It progressed from the periphery of the little ulcer equally all round towards its centre, and a fresh little collection of blood-vessels and a fresh pannus sprang up, running not alone from the sclerotic edge, but from the cornea towards the centre of the tumour, which was now the deepest part of the ulcer.

The Section then adjourned.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1887-88.

President—ROBERT ESLER, M.D.

Hon. Secretary—JOHN M'CAW, M.D.

Notes of some of the Gunshot, Revolver, and Buckshot Wounds which came under my notice during the Riots of 1886. By HUGH LEWERS, M.D., M.Ch.; Physician to the Ulster Hospital for Women and Children.

S. BROWN, aged twenty-three. Revolver wound in right arm. Bullet passed upwards, first through belly of flexors of forearm, and then obliquely through biceps, and was found lying at inner side of biceps, immediately over brachial. Made incision, and removed a .450 revolver bullet, some pieces of clothing, and clots. At bottom of wound could see brachial pulsating. This bullet made altogether four wounds in arm—two entrance and two exit. No secondary hæmorrhage, although sloughing was free. Did not heal for six weeks, as he engaged in other riots, drinking, and passed a month in gaol.

Maggie M'Alister, aged eighteen years. Gunshot wound. Bullet passed through right cheek, fractured ascending ramus of jaw, fractured cervical spine, carrying away bodies of two vertebræ, and was stopped by deep fascia on left side of neck. Died immediately. No hæmorrhage. *Post mortem.* Death from fractured spine and injury to cord. Bullet much twisted and flattened, and marks on it show torsion given to bullets by rifles in gun barrel.

George Kyle, about fifteen years of age. Bullet wounds chest and back, exit and entrance wounds. *Exit wound smaller than entrance*—a point noticed several times. Bullet passed through chest wall, fractured two ribs in front, through lung, through two ribs at back, passing out about two and a-half inches left of spine. No external hæmorrhage, but air escaping through both wounds. Lived forty minutes. *Post mortem,* showed death to result from internal bleeding, as lung was collapsed and left pleural cavity filled with blood.

J. T., aged about twenty-five years. Buckshot wound at back of right ear. Walked into surgery after receiving it, did not complain of any uneasiness. Probe passed freely into wound about three inches, and would have gone further; but as it appeared to go straight into brain,

and as I had no doubt pellet was lodged in brain, sent him to Royal Hospital, where he remained fourteen days, and then went home without showing any symptoms. About thirteen months after, he was admitted to Royal Hospital, and a pellet of buckshot was removed from tissues over squamous portion of temporal on right side. The question was, had he received the two pellets. or was this the one which appeared to have entered brain? During the interval he had no brain symptoms, and is at present alive and well.

S. Mawhiney, aged about eighteen years. Compound comminuted fracture of left humerus, about junction of upper and middle thirds. Rifle bullet passed completely through, and broken fragments were protruding through both apertures. Reduced bones, replacing attached fragments. Very little hæmorrhage, although arm appeared to be hanging together by skin only. Put up on angular splint, with large pads of tenax, and sent at once to hospital.

Private Charles Fredrick Hughes, West Surrey Regiment, shot in Brickfields, by John Walker, July 13th. Lived about twenty minutes. *Post mortem*. Bullet entered chest between 5th and 6th ribs, passed through lobe of lung, through left side of body of dorsal vertebra, and was embedded in muscles of back. Found on opening spinal canal that cord and meninges were uninjured, but anterior and posterior roots of nerves were cut away close to cord. Lung collapsed and pleura filled with blood. Death from shock and hæmorrhage.

July 13. — Watterson. Shot in Beverly-street. Saw him at 8 p.m.; found two small wounds on front of body, upper one to left side of sternum in nipple line; lower one at upper part of abdomen. Appeared like buckshot wounds. Probe would not pass owing to buttonholing, so could not tell if they had entered or dropped out. Patient was completely collapsed, and died in about ten minutes. *Post mortem*. Found that two pellets of buckshot had passed completely from chest to back; upper one between ribs through lung at root, and was embedded in muscles of back; lower pellet passed through abdominal wall, liver, and was broken into fragments by contact with body of lower dorsal vertebra. Internal hæmorrhage was great, as pleural and peritoneal cavities were filled with blood.

This case shows the mistaken idea that buckshot is not dangerous to life. The range in this case was about forty yards. I have no doubt the pellets would have passed completely through body had they not come into contact with bone. The *post mortem* search for buckshot is more difficult than one would imagine. In this case it was only after cutting the muscles into minute sections that the pellets were found.

August 8th, 1886. Elizabeth Cameron, aged seven years. Brought to me by her father about ten minutes after receiving injury. Found circular wound in left arm-pit, in front of posterior fold of axilla, and over an intercostal space. Could find no opening into pleura, and no lung symptoms. Was afterwards taken to Royal Hospital, where she remained for six days. About three days after admission, symptoms of pleurisy set in. Patient was removed from hospital on sixth day, and I was called to see her. Found her suffering from acute pleurisy. Temp. 103.4°. Dulness all over left side of chest. Hectic. Recommended operation for empyema, but parents would not allow any interference. Died on eleventh day after receiving injury. *Post mortem* twenty-four hours after. Left pleural cavity filled with pus up to clavicle. Lung collapsed, but uninjured. Found wound in pleural cavity corresponding to wound in axilla, but slightly higher, and so muscular movements caused the tissues to slip and close wound in pleura. Evidences of recent pericarditis. All organs wasted. At bottom of pleural cavity found .450 revolver bullet rolling about free, marked on one side by contact with some hard substance, which must have happened before entering body. Death from pleurisy followed by empyema.

As range in this case was 209 yards, defence at trial was that revolver bullet would not kill at that distance. Mr. Playfair's experiments at rifle range proved that revolver sends a bullet 600 yards, which will kill at 450 to 500, and completely flattened a bullet at 209 yards.

August 15, 1886. James Smyth, about twenty-eight years. Bullet wound at left hip joint. Bullet struck trochanter of femur, passed up, tearing up crest of ilium, and was removed from tissues over lumbosacral region. As there was much oozing, was sent to hospital, where he remained eleven months, during which period several pieces of bone were removed, evidently from iliac crest. Acute osteitis of femur set in, involving upper third. He left hospital in July, 1887, and has since been under my care. For two months suffered great pain over region supplied by external cutaneous nerve; relieved by hypodermics of morphin. As morphin habit began to grow on him, gave hypodermics of water, with same result. Osteitis gradually spread, and at present entire shaft and head of femur are involved. Recommended amputation at hip-joint, but he preferred to wait. At present is confined to bed, discharge from femur and ilium continuing. Evidences of albuminoid degeneration of liver setting in. Kidneys healthy. No pain. Limb greatly wasted. Would still have chance of recovery by amputation, but will not agree to have it done. He has now been confined to bed for two years.

Hill Walker, aged about twenty-five years. Bullet wound at front of iliac crest on left side. Bullet passed through iliac crest in whole of its

length, splitting bone into two. Bullet was also cut into two pieces by ridge of bone. One piece of bullet I cut out of tissues over junction of ilium and sacrum, and the remaining piece was removed in hospital. Osteitis set in, which nearly carried patient off. Several pieces of bone were removed, and patient left hospital in about four or five months. I saw him after leaving, and found very little difference in use of legs, and did not suffer in any way from the injury.

William Scott, jeweller, aged about twenty-four years. Bullet wound through tissues at inner side of knee-joint, just missing joint. Severe stinging pain down inner side of leg, increased by slightest jar to bed or sudden noise. Poulticed with charcoal till slough separated. Dressed with iodoform and gauze after. Wound completely closed and healed up. Examined him eighteen months after injury; found some wasting on inner side of leg, below knee joint. Shin numb. Loss of sensibility in region supplied by cutaneous nerves passing seat of injury. Still has burning pain. Any sudden sound or fright causes severe shock at wound and feeling of great weakness in right knee. Recommended massage.

August, 1886. J. S., aged twenty-two. Bullet passed through left tibia, about two and a half inches below knee-joint, producing compound comminuted fracture. Saw him fifteen minutes after. No hæmorrhage. Removed four large pieces of bone from wound, as they were not attached to periosteum. Put on a back splint, dressed wound with tenax, and sent to Royal Hospital. Saw him after leaving, and informed me he had two attacks of secondary hæmorrhage while in hospital, and that in all thirteen pieces of bone were removed from his leg. Examined the leg in June, 1888, about two years after injury, and find bone almost completely restored, leg as strong as ever, but tissues over wound inflamed and discharging, as patient drinks heavily.

Two or three points struck me particularly when engaged in this sort of practice—the small quantity of blood lost, even when wounds were in neighbourhood of large vessels; the small amount of pain complained of during manipulation, whether from pluck or insensibility I cannot say; the fact that the exit wounds were invariably smaller than entrance wounds; the danger of the introduction of buckshot as an aid to keep the peace, the greater proportion of injuries being in lower limbs, and especially buckshot wounds in front of thigh; the results obtained in cases of compound comminuted fractures by conservative surgery.

Successful Ovariectomy in the Ulster Hospital, Belfast. By ROBT. ESLEB, M.D.

The cyst which I now show you was removed by me from a woman, aged thirty-five years, on the 9th of June last.

The patient had not had a child for nine years, but had menstruated regularly up till a year ago, when she first observed her abdomen becoming enlarged in left side. During the four months previous to admission to hospital she increased in size rapidly, and was sick almost daily. During this time she lost much flesh.

The operation was performed in the usual method, and there is nothing special to note only that the cyst was dermoid, in consequence of which the canula became blocked up with hair and had to be withdrawn, and the contents discharged through the wound. Not a drop entered the abdomen. Nevertheless, the abdominal cavity was freely washed with a weak solution of boric acid. Silk ligature was used for the pedicle and silver sutures for the abdominal wound. A pad of salicylic wool and strapping completed the operation.

The vomiting ceased after the first day, and the patient expressed herself as feeling perfectly well.

She was put on ordinary diet, and no medicine of any kind was given.

The stitches were removed on the eighth day, when the wound was found to be perfectly healed, and not a trace of pus was present.

There was no rise of temperature at any time, and the pulse was under 80 all through.

The patient was walking about inside a fortnight, and left hospital in less than three weeks from the date of the operation.

Brief Notes of a Successful Case of Double Ovariectomy. By PROFESSOR SINCLAIR, M.D., F.R.C.S.

A married woman, aged forty-one years, the mother of nine children, was operated upon for a large multilocular ovarian cyst on the left side, and a repeatedly inflamed and much adherent dermoid cyst, the size of a small cocoa-nut, on the right side.

There had been no preliminaryappings.

The operation was performed with antiseptic precautions, but the spray was not employed.

A four and a half-inch incision was made, and after thirty minutes the large multilocular cyst, which presented a few soft adhesions, was removed. The peeling of the dermoid cyst occupied a whole hour, being bound by dense adhesions to the parietal peritoneum of the front and lateral abdominal wall, the iliac fossa, and pelvic brim. A flap, two inches square, of parietal peritoneum, separated in this process, was excised. The raw surface left after peeling the dermoid completely was six inches square and was touched with semi-solid persulphate of iron. Some

vessels were tied with catgut in this place, as well as several omental adhesions before division. The Staffordshire knot was used for both pedicles, and for greater security, those cut vessels, that were recognisable as such on the pedicle stump, were twisted and touched with a 4 per cent. salicylic collodion.

The abdominal and pelvic cavities were very thoroughly freed from blood-clot and oozing by sponging. There was no flushing of the cavities, and no drain-tube was employed. Silver sutures closed the parietal wound, which was dressed with iodoform, wool, and strapping. The subsequent course showed absence of fever and pulse elevation. The first dressing, on seventh day, showed union by first intention. No opiate, no ice, no cold drinks were used at any time. Sips of toast-water by the mouth and half-pints of tepid water per rectum were given for the thirst. No food by the mouth for first twenty-four hours. Afterwards tea and slops. A seidlitz-powder was given after fourth day.

The patient rose after the fourteenth day, and was discharged at the end of the month.

A menstrual period occurred three days after operation.

The points in the case that appear interesting are :—

1. The excision of a flap of parietal peritoneum, which peeled off, and would have probably sloughed.
2. The tolerance of so much persulphate of iron as was necessary to stop the bleeding where the dermoid lay.
3. The non-use of a drainage-tube, notwithstanding the iron and the presence of considerable blood in the pelvic cavity, the most of which was, however, removed by elaborate sponging.
4. The value of water-enemata in allaying thirst.
5. The non-use of opium in every form.
6. The rarely use of an aperient.
7. The comfort due to wearing the rectum tube for twenty minutes at intervals.
8. The occurrence of a menstrual period on the third or fourth days after operation, notwithstanding the removal of both ovaries—a not infrequent occurrence after double ovariectomies, whatever explanation may be given of it.
9. The uneventful course after operation.

GREEN DIARRHŒA IN BABIES.

DR. PIÈRE VIGIER recommends the following prescription for the green diarrhœa of babies :—*R.* Acidi lactici, 2 grammes ; syr. simplicis, 98 grammes ; essentia citron, guttam.—*Mix*, and filter through paper. Dose : two or three teaspoonfuls daily.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 24.

SUCCESS IN MEDICAL TEACHING AND PRACTICE.

An Address, introductory to the Session of 1888-89, delivered in the Theatre of the Meath Hospital, Dublin, on Monday, October 1, 1888. By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dub.; Fellow and Registrar of the King and Queen's College of Physicians; Physician to the Meath Hospital, and Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin; Ex-Scholar and Diplomat in State Medicine of Trinity College, Dublin.

GENTLEMEN,

On this day (Monday, October 1st, 1888) we are met together to inaugurate the one hundred and thirty-eighth Session of the Meath Hospital as a school of clinical teaching in medicine and surgery. I have purposely laid stress upon the date of the opening of the present Session, because it tells us that effect has at last been given to a long-talked-of and desirable reform. From time immemorial in the history of this hospital the first Monday in November in each year had been set apart for the formal opening, by an inaugural address, of the Winter Session, which in name always commenced on the first day of October. The wisdom of such an arrangement—common to the Meath Hospital with all the kindred institutions and medical schools in Dublin—is certainly questionable; and I am gratified to think that to this far-famed hospital, around which so many cherished memories cling, belongs the credit of beginning a new order of things, in accordance with which the full teaching machinery of the institution is put in motion at the very commencement of the Session, and not, as has hitherto happened, a month, or five weeks later.

The change has been made not a moment too soon. Within recent years a practical bent has been given to the education of the medical student from his first year's work in the dissecting-room to his final examination in clinical medicine and surgery, and in practical surgery or surgical operations. Every day—nay, every hour and every moment of the student's career—has come to be of priceless value; and in the *Annus medicus*, the most precious month of all the months is October, when—

“The pale, descending year, yet pleasing still,
A gentler mood inspires.”*

It is now that the once jaded brain, refreshed and invigorated in the “long vacation,” is eager to renew the intellectual strife, and to win fresh laurels at the first encounter.

* The Seasons. By James Thomson. Autumn.

And again, the Regulations for the Qualifying Examinations in Medicine, Surgery, and Midwifery, held conjointly by the King and Queen's College of Physicians and the Royal College of Surgeons in Ireland, are explicit that attendance on the practice of a recognised medico-chirurgical hospital for *nine* months before the candidate is admitted to his second, third, or final professional examination is indispensable. Hence, in order to qualify for admission to examination in July, such hospital attendance must begin on the 1st of October preceding. If, then, hospital attendance is essential in October, is not clinical teaching also called for? Else will the unwary student fall into the perilous habit of merely "*walking*" the hospital—a practice which may be likened to the will-o'-the-wisp—

"The wildfire scattered round, or gathered trails
A length of flame deceitful o'er the moss:
Whither, decoyed by the fantastic blaze,
Now lost and now renewed, he sinks absorbed."

Since our last "opening day" several events have occurred which are destined to find a place in the Annals of the Meath Hospital. Of these the first is the resignation of one of the most esteemed and respected members of the medical staff—James Henry Wharton, the second in seniority of the surgeons of the hospital—a man whom we could ill afford to lose. For well-nigh thirty years Mr. Wharton had discharged the duties of surgeon to the hospital with marked ability and no less conspicuous zeal, when early in last July he tendered his resignation to his colleagues, on the ground of advancing years. With unfeigned regret, Mr. Wharton's resignation was accepted; but we are glad to think that his kindly, genial presence is still amongst us, and that he remains, as he has ever been, a true and faithful friend of the Meath Hospital. I am tempted to quote a well-known authority,* who gives a word-portrait of our former colleague and present friend in almost the following language:—"Mr. Wharton is, and always has been, a most careful, painstaking surgeon. He is tall and handsome, and has benevolence and kindness depicted in his face. The pupils are extremely fond of him, and admire and love him for his consistency, unswerving honesty of purpose, and sterling friendship."

The vacancy on the surgical staff caused by the resignation of Mr. Wharton has been filled by the appointment of Sir William Stokes, who, after an absence of twenty years, has returned to that hospital where he first won his spurs as a skilful operator and able surgeon, in the years 1864 to 1868, and where to all time the honoured name of Stokes will be a name to conjure by. On this very day Sir William's term of hospital

* L. H. Ormsby, M.D., F.R.C.S.I. *History of the Meath Hospital and County Dublin Infirmary.* Dublin: Fannin & Co. 1888. Page 218.

duty begins. I feel I am not presumptuous if I tender to him, in your name and in my own, our best wishes for his success and happiness in this and many another coming session.

A third notable event of the past year was the payment to the hospital authorities of the "Bury Bequest," about which we have all heard so much during the last nine or ten years. Unfortunately, in consequence of the depreciation in value of land in Ireland within recent times, this munificent bequest is seriously diminished in amount sterling. Nevertheless, it is most acceptable, and will permanently endow several additional beds in the hospital wards. It would be ungrateful on my part, as one of the medical staff, to omit to state in this connection that it is to the friendly influence of the Hon. Judge Purcell, Q.C., the surviving trustee of the Bury estate, that the hospital owes this handsome addition to its funded property. To the honourable and learned judge a deep debt of gratitude is due for his disinterested action on behalf of the Meath Hospital.

During the official year, 1886-87, a munificent bequest of £4,500 was paid over to the Standing Committee by the Crown acting as representative of the late Mr. John Barber. In the summer of 1887, the building of a memorial wing to perpetuate Mr. Barber's name in connection with the hospital, was commenced. The building was completed within a year, and many of my audience were present a few days ago at the formal opening of the new wing by His Excellency the Marquis of Londonderry, Lord Lieutenant of Ireland. The "John Barber Memorial Wing" contains two large wards, with sixteen beds in each, and fitted with lavatories, bath-rooms, and all modern sanitary appliances, including water-supply, ventilation, and warming. An important addition has thus been made to the accommodation hitherto afforded by the Meath Hospital to the sick and suffering, and I have every confidence that the "ways and means" will be forthcoming to enable the Standing Committee to maintain the extra beds in full working order from year to year.

With the view of increasing the teaching power of the hospital, the Medical Board have adopted a revised scheme of clinical instruction, which they intend to carry into effect forthwith. This scheme is a three-fold one, and bears upon the teaching of students in the Extern Department, clinical instruction in the wards, and the study of pathology.

"The Out-patient Department," said my colleague, Dr. Arthur Wynne Foot, in an Address delivered in this Theatre on November 2, 1885. "affords a field of study in which a beginner can spend much time with advantage. The greater part of my first two years I spent at work in the dispensary. The *pabulum* presented there is better suited for the lacteal period of study than the more serious and complicated cases under treatment in the wards. The student sees there the more trivial ailments, such as he will oftenest meet, and frequently be best remunerated by in

after-life. He has constant opportunities, if he will take advantage of them, of educating his senses—touch, sight, smell, and hearing.”

I am prepared to endorse this opinion, provided always that the Extern, or Out-patient Department is properly managed and efficiently worked. Let us see what are the requirements in a well-managed extern department. A high authority upon this subject—Captain Douglas Galton, R.E., C.B.—writes as follows:—

“The out-patients’ department requires a large, airy waiting-room, with separation of sexes, and separate closet accommodation for males and females, which without great care may (even when detached) become a nuisance to the sick wards; a consulting-room for each of the physicians and surgeons, to which should be attached a small lavatory, and all necessary convenience for the complete examination of patients. . . . The entrance and exit should be through different doors.”*

Hitherto the whole brunt of working the extern dispensary has fallen upon the surgeons of the hospital, while the entrance-hall of the main building has been used as a reception-room for such out-patients as desired to consult the physicians or their assistants. The scheme of reform which begins this day to be carried into effect changes all this. We purpose in future to have a medical as well as a surgical dispensary, so that the physicians and their assistants will take part with the surgeons in the work of teaching in the Out-patient Department to a greater extent, and in a more systematic way than has been the case for many years past. When this new system is in fair working order, it is contemplated to have a special dispensary for diseases of the skin on one day of the week, and perhaps another for diseases of women on another day of the week. In this connection, I may be permitted to express the hope that the Standing Committee may be able to place at the disposal of the staff a consulting room within the main building, in which to see and advise such out-patients as bring letters of recommendation from subscribers to the hospital. In this way we may hope that the Out-patient Department will come to be a more useful aid to clinical instruction than it has ever been in the past.

Arrangements have been made also by which the clinical teaching in the wards will be developed and improved. As regards the medical department, each physician will take two months’ clinical duty in turn, and I am commissioned by my colleague, Dr. Foot, to inform the members of the class that he hopes to meet them in the wards at 9 o’clock to-morrow (Tuesday) morning, and at the same hour on each Tuesday and Saturday morning, during October and November. The regulations of the Conjoint Examinations held by the two Royal Colleges in Ireland require for the second professional examination what is called “Elementary Hospital Practice,” and this, so far as medicine is concerned,

* Quain’s Dictionary of Medicine. Page 652.

embraces the methods of physical diagnosis, the use of the stethoscope, percussion, palpation, the use of the thermometer, the examination of the pulse and the breathing, or respiration, the examination of the tongue, the application of urinary tests, and the general principles of case-taking. Now, in order to comply with these requirements, we propose to set apart the first portion of Thursday morning in each week for instruction in this most important practical subject, Elementary Medical Hospital Practice. And here, as in every division of the work of the medical department, Dr. Foot and I are glad to think that our efforts will be ably seconded by our clinical assistants, Messrs. Lennon and Craig, who have long since won their spurs as teachers of the theory and practice of medicine, including pathology and therapeutics.

In the surgical department even more significant changes are being made. In future two members of the surgical staff will be on duty together, and for a period of two months at a time. The class will thus have the benefit of a greater variety in teaching. One of the two surgeons on duty will be responsible for clinical instruction on Mondays, the other for that on Fridays. But Wednesday will probably be the best morning in the week. From 9 a.m. to 10 a.m. instruction will be given in elementary surgical hospital practice—that is, in the general principles of the treatment of fractures, of dislocations, of wounds, of hæmorrhage, in bandaging, and in the general principles of surgical case-taking. At 10 a.m. the class will adjourn to the operating theatre, where they will meet the surgical staff, and have the advantage of witnessing various operations and consultations upon selected cases.

Nor will the study of pathology be neglected in this general reform. At this time of day it is surely superfluous to advocate the claims which this great science—still, indeed, in its infancy—has upon everyone who aspires to practise curative, or to understand and teach preventive medicine. I would merely quote two short passages from the eloquent Address which Dr. Joseph O'Carroll delivered at the beginning of the Session of 1887–88, at the Richmond, Whitworth, and Hardwicke Hospitals. He said:—"Now, as in the past, the only sure basis of progress is observation, and of all the fields of observation open to you, I submit that pathology, studying as it does all the body changes, the sum of which we name disease, claims your first care. You can have no idea till you come to practise for yourselves how vivid will be your diagnosis, when based on a sound pathological knowledge. It is the absence of such knowledge which lends such large and persistent objectivity to such ideas as 'constitution,' 'nerves,' 'system,' and many others which I could mention, which are used either as substitutes for accurate knowledge or as cloaks for ignorance." And again, "Pathology . . . forms nearly the whole groundwork of Preventive Medicine. Learning the causes of disease in one generation, it shows us how to anticipate or neutralise

them in the next, and thus to increase, as it undoubtedly has increased already, the average duration of human life. At this moment two great investigations are in progress. On the one hand daring speculators are searching for the ultimate cause of the most deadly plagues of humanity among the hitherto unsuspected atoms of Creation, while others devote themselves with equal assiduity to the discovery of antidotes to their virulence. These investigations are not yet complete, but that they should even have been entered on is the boast of pathology."

With equal wisdom and foresight, then, the Medical Board have appointed a Surgical Pathologist, and have arranged for the systematic teaching of the great subject of pathology, or the investigation into the causes of disease and death, in connection with both the medical and the surgical departments of the hospital.

Such is a brief sketch of the arrangements which have been made to meet the requirements of the age as regards clinical teaching. We trust they will be approved at your hands. All we can say is—

" 'Tis not in mortals to command success.
We will do more—we will deserve it."

And this leads me to consider for a few moments what is that *success* at which we aim, and which, if attained, will, like virtue, be its own exceeding great reward. In the first place, the word "success" suggests the idea that a severe, or a long and arduous, struggle has gone before. And so it is—day after day, month after month, year after year, an unceasing conflict with disease and death is waged in our wards. Victory inclines now to this side, now to that. Too often are the weapons drawn from the *armamentarium chirurgicum* all-powerless against the deadly foe, which advances to the attack upon the stronghold of life under the guise of tetanus, or hydrophobia, or cancer, or malignant pustule. Too often does diphtheria, or petechial typhus, or purpuric small-pox, or malignant scarlet fever, or aneurysm, or apoplexy defeat the physician's untiring thought for, and devoted care of, the patients entrusted to his charge—nay, even he himself may fall a victim in the strife—as Cymbeline addresses Cornelius, who has announced the death of the Queen :—

" Whom worse than a physician
Would this report become ! But I consider
By medicine life may be prolonged, yet death
Will seize the doctor too."

But, granting all this, shall we, or can we, deny the triumphs of both Medicine and Surgery over disease and death? It was my privilege not long ago to listen to an epoch-making Address on the "Surgery of the Brain and Spinal Cord," delivered by Dr. William Macewen before the British Medical Association at Glasgow University. The pith of that

Address was that an extended physiological knowledge enabled cerebral lesions to be more accurately localised, while the speaker's clinical experience showed that by preserving aseptic the parts operated on, surgical interference with the brain and spinal cord could be robbed of its chief danger. In illustration of this contention, Dr. Macewen quoted many cases from his own practice. To three of these I would briefly refer, using Dr. Macewen's own words to describe them :—

“Psychical Blindness the Key to a Lesion in the Angular Gyrus; Removal; Recovery; Medico-legal Aspects.—A man who had received an injury about a year previously, suffered from deep melancholy, strong homicidal impulses, relieved by paroxysms of pain in the head of indefinite seat. Though the pain was excruciating he welcomed it, as it temporarily dispelled the almost irresistible impulse to kill his wife and children or other people. Prior to receiving this injury he was perfectly free from impulses of this kind, and had led a happy life with his family. Behind the angular process of the frontal there was a slight osseous depression, which could not account for his symptoms. There were no motor phenomena, but on minute inquiry it was discovered that immediately after the accident, and for about two weeks subsequently, he had suffered from psychical blindness. Physically he could see, but what he saw conveyed no impression to his mind. An object presented itself before him which he could not make out, but when this object emitted sounds of the human voice, he at once recognised it to be a man, who was one of his fellow-workers. By eyesight he could not tell how many fingers he held up when he placed his own hand before his face, though by the exercise of his volition in the act, and by other sensations he was cognisant of the number. He had been in the habit of reading the New Testament, and when he had so far recovered from his injury, he wished to resume his reading. He knew where the book lay near his bed and could put his hand on it in the dark. One day he stretched out his hand, took the book, recognising it, through the sense of touch, by its smooth leather covers, and the deeply indented letters on its back; he opened it, saw what he considered must be the letters, and the blocking of them into divisions for the words, but they were unknown symbols to him, they conveyed no impression of their meaning, the memory of their signs was gone, it was a sealed book to him. These phenomena, however, gave the key to the hidden lesion in his brain. On operation the angular gyrus was exposed, and it was found that a portion of the internal table of the skull had been detached from the outer, and had exercised pressure on the posterior portion of the supramarginal convolution, while a corner of it had penetrated and lay imbedded in the anterior portion of the angular gyrus. The bone was removed from the brain and re-implanted in proper position, after which he became greatly relieved in his mental state,

though still excitable. He has made no further allusion to his homicidal tendencies—which previously were obtrusive—and is now at work.”

But even more remarkable than this are two cases of spinal paralysis, in which scarcely any hope of recovery could be entertained, but which were absolutely cured by operations that might well be called heroic :—

“ *Case of Paraplegia with Incontinence of Urine and Fæces, due to Connective Tissue Tumour at Seat of Angular Curvature of Spine, completely Cured by Removal of Tumour and Laminæ of Vertebrae.*—In 1882 a boy, aged nine, came under observation, suffering from complete sensory and motor paraplegia, with incontinence of urine and fæces, which had existed for two years previously, but had been absolute during the last eighteen months. For three years he had had angular curvature of the spine, most marked between the fifth and seventh dorsal vertebrae, for which he had been treated by extension and plaster jackets. When seen by Dr. Macewen the curvature had become fixed by ankylosis of the bodies of the vertebrae. Treatment by extension and plaster jackets was, however, tried again, under direct supervision, in the hope of amelioration. It proved futile. The limbs were livid and cold, affected with marked spastic rigidity and with wasting of the muscles. The symptoms exhibited pointed to irritation of and pressure on the spinal cord about the level of the sixth dorsal vertebra. The paralysis having existed slightly for two years and markedly for eighteen months, and showing no signs of amelioration under ordinary treatment, this operation was deemed expedient. Dr. Alex. Robertson saw this case and agreed in the hopelessness of any other procedure than operation. On May 9th, 1883, the laminæ of the fifth, sixth, and seventh dorsal vertebrae were removed. There was no pulsation in the portion of the cord exposed. Between the theca and the bone there was found a fibrous neoplasm of one-eighth of an inch in thickness, which was firmly attached to the theca and covered about two-thirds of its circumference. This was carefully dissected off. The cord was then able to expand backwards, and its pulsations, which up to this period were absent, began to show themselves, especially opposite the fifth dorsal. Twenty-four hours after the removal of the pressure the limbs had lost their livid colour, were distinctly warmer, the spastic rigidity had greatly lessened, the sense of tickling the soles had returned, and that of touch had improved. The first return of movement was observed eight days after. Soon he had perfect control over his sphincters. Six months subsequently he was able to go about without support. Five years afterwards he walked three miles to pay me a visit. He attends school regularly, joins in all the games, including football, and he says he feels quite strong.

"*A Second but more Aggravated Case.*—In 1884 another case was seen of a somewhat similar kind, though much more aggravated, the symptoms being so far advanced as to indicate organic changes in the cord itself, which rendered operation almost hopeless. It was only on the urgent and touching appeal of the girl herself that the operation was undertaken. A dense connective tissue tumour existed between the bone and the theca, which was so firmly adherent to both that in some places the theca was elevated along with the neoplasm. The portion of the cord thus exposed was shrunken to about half its normal dimensions and lay like an inanimate rod. After the elevation of a sufficient number of laminæ to expose a portion of the cord which pulsated, the pulsations were communicated to this rod, pushing it from above downwards, but there were no distensible pulsations in the rod-like part of the cord. From the whole appearances presented at the operation, it was considered that there was no hope of her recovering from her paralytic state. However, ten hours after the operation the limbs had lost their lividity, felt warm to the touch, and the patient said she experienced a sensation "as if she were dreaming that her legs were on and hot water was running through them." From the fourth day after the relief of pressure she had continence of urine and fæces, for which alone she declared she would willingly have undergone the operation. Sensation quickly returned to the limbs, motion very slowly. Six months after she could move her limbs freely. Eight months subsequent to the operation she walked a quarter of a mile, stated she could perform many light duties in the house, besides attending to herself. She has since been very well and able to enjoy life."*

These cases read like fairy tales, and yet we may say they are types of which illustrations are constantly met with now-a-days. During the past session of the Royal Academy of Medicine in Ireland, two meetings of the Section of Surgery were devoted to the reading and discussion of three notable communications on the "Surgery of the Brain."

One of these was by Mr. W. Thornley Stoker, F.R.C.S.I., on "Subcranial Hæmorrhage treated by Secondary Trephining;" another was by Sir William Stokes, F.R.C.S.I., on "Traumatic Subdural Abscess of the Brain and its Treatment by Trephining and Aspiration;" and the third was by Mr. C. B. Ball, F.R.C.S.I., on a case of "Traumatic Aphasia successfully treated by Trephining, and Removal of a Blood-clot from the interior of the Cerebrum."

These and other like cases are alluded to by Sir William Stokes, in the eloquent Cavendish Lecture for 1888, on "The Altered Relations of Surgery to Medicine."

But why should I weary you with further details? The clinical records I have quoted are the most fitting tribute which can be paid to

* British Medical Journal. August 11, 1888.

the genius of physical diagnosis and operative skill. They bear glowing testimony to the advance, by leaps and bounds, of medical science, and supply the needful spur to the toilers in the vast field of original research. They teach the lesson—so full of encouragement to the God-fearing and man-loving physician—that success will crown, in many instances if not in all, his noble efforts to combat disease, to save life, and to stem the rising tide of human misery and despair.

In the second place, and from another point of view, the word “success” implies that we intend—perhaps I should say, hope—to do our duty by you, my young friends. Through your parents or guardians, or of your own free will, you have entrusted to our safe keeping, for the time being, your life-interest in the Profession of your choice. You have entered the walls of this hospital with all the enthusiasm of youth. Far be from us to quench, through any carelessness, or indifference, or coldness on our part, that vital spark—rather be it ours, by kindly encouragement, patience, and, if need be, self-denying and painstaking effort, to fan it into the flame of genius and research. Of these great prerogatives of the human mind, this hospital has been the home in the far-distant past. There is no reason why it should not be so equally, or in a still greater degree, in the present or in the immediate future. The spirit of scientific discovery is abroad, nor has it failed to soar on airy pinion above the wide-stretching domains of the Healing Art. In the realms of both Curative and Preventive Medicine its presence has been felt, and the future progress of these great branches of human knowledge can scarcely fail to be as marvellous as it assuredly will be rapid. At the beginning of the Winter Session of 1879–80 I delivered in this Theatre an Introductory Address upon what I ventured to call the “Microcosm of Disease.” In that address an account was given of the knowledge acquired up to that time as to the connection between diseased states and the presence in the blood of microscopic organisms, or microphytes.

But how vast the progress in such researches in the nine years which have elapsed since 1879! Think of the marvellous light which has been shed on the nature and ætiology of the tubercular diseases by the discovery of the *Bacillus tuberculosis* by Dr. Robert Koch. The microphytic origin of enteric fever, erysipelas, pneumonia, cholera, diphtheria, and other like diseases has engaged the earnest attention of the foremost thinkers in this country and on the Continent. Nor can I in this connection pass over in silence the work of one of the ablest, most illustrious, and most veteran labourers in the field of Bacteriology—I refer to Louis Pasteur. Since 1880 he has made known his researches on the attenuation of the virus of fowl-cholera,* on vaccination for anthrax (Milzbrand, or Charbon) by inoculation of the attenuated virus,

* *Comptes-Rendus de l'Academie des Sciences de Paris.*

on an analogous vaccination for Swine-plague (*Rouget des Porcs*), and, above and before all, on vaccination for rabies by means of its attenuated virus. We are not yet in a position fairly or accurately to gauge the gain to humanity and to science which will accrue from these investigations; but we rejoice to think that the noble and cosmopolitan profession, to which so many of us have the good fortune and the happiness to belong, has showered upon Pasteur such honours as it was in its power to bestow.

Lastly, within the past two years three notable contributions have been made to the ever-fresh and fascinating subject of "Fever." In 1887, Dr. Donald MacAlister, University Lecturer in Medicine, and Physician to Addenbrooke's Hospital, Cambridge, was chosen to give the "Goulstonian Lectures" before the Royal College of Physicians of London. He selected for the subject of his lectures the "Nature of Fever." The outlines of his theory are that "the nervous mechanisms of heat-loss or thermolysis, of heat-production or thermogenesis, of heat-balance or thermotaxis, constituted the thermal nervous system, and these mechanisms were in ascending order of complexity and of evolution. Fever was a dissolution beginning with thermotaxis and extending to the inhibitory mechanism of thermogenesis. Hyperpyrexia was a still deeper dissolution, and extended to thermolysis."^a

In the present year, the Royal College of Physicians of London did Dr. MacAlister the further and deserved honour of electing him the Croonian Lecturer.

In response to the request of the President and Fellows of the College that he would deliver the Croonian Lectures in 1888, Dr. MacAlister discussed—(1.) the light thrown on the nature of fever by the means employed successfully for its treatment; and (2.) the lessons in the treatment of fever which flow from a right understanding of its nature. It will thus be seen that the Croonian Lectures of 1888 are a sequel of the Goulstonian Lectures of 1887.

The third work to which I refer is a "Clinical Study" of Fever by Dr. T. J. MacLagan. Having given an interesting historical *resumé*, extending from Galen to Ord, and embracing the views of Virchow, Traube, Liebermeister, and Leyden, the author proceeds to describe the two modern theories of pyrexia—the *neurotic* and the *metabolic*. According to the first of these theories, the rise of temperature is due to impairment of that inhibitory force by which the heat-producing process is kept within normal physiological bounds. According to the second, or metabolic theory, the rise of temperature results from increased activity of the process by which heat is naturally formed. As Dr. MacAlister, perhaps, would say, pyrexia depends on impaired thermotaxis and exalted thermogenesis. These two theories—the neurotic and

^a *British Medical Journal*. June 23, 1888. Page 1330.

the metabolic—are not antagonistic, but each is complete in itself, and in their light, the various phenomena of the fevers receive a satisfactory and full interpretation.

Enough has been advanced to prove that Medicine is a progressive science, and affords free scope for the exercise of the powers of those who are earnest, well-trained, intelligent seekers after truth. I would conclude this address with a warning and a promise.

There is a danger that in the daily practice of our Profession—the noblest of all Professions, the Church not even excepted—we may be carried away by our enthusiasm on the one hand, or we may be tempted by straitened circumstances on the other hand, to forget wherein its nobility consists. It is in its Christ-like nature. In Homer's great Epic, the word used to denote a physician—*ἰατρός*—derived from the verb *ἰάομαι*, "I heal," or "I cure," is etymologically and almost in form the same as the name borne by the Divine Healer of the Nations, and indeed if you ask me where a faithful word-picture may be found which will convey to men's minds all that a physician ought to be, I would refer you to the "Sermon on the Mount." From that marvellous discourse, which fell from the lips of One who more than once claimed for Himself the title of "Physician" as one of honour, we learn what traits of character should be ours. We should be "poor in spirit"—that is, humble-minded, sympathetic, meek, upright, merciful, pure in heart, peacemakers, tolerant of wrong, or as it is—"longsuffering."

Should we, in our course through life, keep this pattern before us, and in our lives realise this ideal as it may be realised, then of each of us—nay, to each of us—it may be said :

"Servant of God, well done!—well hast thou fought
The better fight, who single has maintained
Against revolted multitudes the cause
Of Truth, in word mightier than they in arms ;
And for the testimony of Truth hast borne
Universal reproach, far worse to bear
Than violence: for this was all thy care,
To stand approved in sight of God, though worlds
Judged thee perverse. The easier conquest now
Remains thee." *

RESULT OF TREATMENT OF PHTHISIS BY HYDROFLUORIC ACID.

M. GARCIN (*Le Bulletin Médical*, 21st September, 1887) gives the following as the result of his treatment of 100 cases of tubercle by inhalations of hydrofluoric acid gas:—Relieved, 41; cured, 35; died, 10; stationary, 14.

* Milton. *Paradise Lost*. Book VI.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, October 6, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Sept. 15.	Sept. 22.	Sept. 29.	Oct. 6.		Sept. 15.	Sept. 22.	Sept. 29.	Oct. 6.
Armagh -	5·2	46·5	41·3	10·3	Limerick -	20·2	10·8	18·9	12·1
Belfast -	17·7	20·0	23·4	16·1	Lisburn -	19·3	9·7	14·5	14·5
Cork -	17·5	24·7	18·2	18·8	Londonderry	16·0	16·0	14·3	12·5
Drogheda	25·4	12·7	25·4	16·9	Lurgan -	10·3	41·0	0·0	15·4
Dublin -	18·8	18·3	23·6	22·7	Newry -	21·1	17·6	17·6	21·1
Dundalk -	13·1	21·8	43·6	13·1	Sligo -	14·4	4·8	9·6	9·6
Galway -	10·1	20·2	16·8	20·2	Waterford -	25·5	13·9	27·8	18·5
Kilkenny	16·9	25·4	12·7	38·1	Wexford -	12·8	17·1	21·4	4·3

In the week ending Saturday, September 15, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 16·2), was equal to an average annual death-rate of 17·7 per 1,000 persons living. In Glasgow the rate was 16·7; and in Edinburgh it was 13·9.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 18·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in seven of the districts to 7·0 in Newry—the 6 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from diarrhœa. Among the 77 deaths from all causes registered in Belfast

are 2 from scarlatina, 2 from diphtheria, 1 from simple continued fever, and 8 from diarrhœa; and the 11 deaths for Waterford comprise 2 from typhus.

In the Dublin Registration District the births registered during the week amounted to 185—104 boys and 81 girls; and the deaths to 131—68 males and 63 females.

The deaths represent an annual rate of mortality of 19·3 in every 1,000 of the estimated population. Omitting the deaths (4) of persons admitted into public institutions from localities outside the district, the rate was 18·8 per 1,000.

Twenty-eight deaths from zymotic diseases were registered, being 3 over the number for the preceding week, but 17 under the average for the 37th week of the last ten years. They comprise 1 from varicella (chicken-pox), 1 from measles, 3 from scarlet fever (scarlatina), 3 from whooping-cough, 1 from enteric fever, 8 (including 6 deaths of children under 5 years of age) from diarrhœa, 2 from dysentery, &c.

Five cases of scarlatina were admitted to hospital during the week, being 2 under the admissions for the preceding week. Five scarlatina patients were discharged, 1 died, and 22 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, September 8.

Sixteen cases of enteric fever were admitted, against 7 for the preceding week. Five patients were discharged during the week, and 37 remained under treatment on Saturday, being 11 over the number in hospital at the close of the preceding week.

Only one case of typhus was admitted during the week, and only 4 cases of the disease remained under treatment in hospital on Saturday.

Only 13 deaths from diseases of the respiratory system were registered, being 1 under the low number for the preceding week, and 10 under the average for the 37th week of the last ten years. They comprise 9 from bronchitis, and 2 from pneumonia or inflammation of the lungs.

In the week ending Saturday, September 22, the mortality in twenty-eight large English towns, including London (in which the rate was 15·8), was equal to an average annual death-rate of 18·0 per 1,000 persons living. In Glasgow the rate was 19·2; and in Edinburgh it was 17·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 19·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in ten of the districts to 4·4 in Dundalk—the 5 deaths from all causes registered in that district comprising 1 from scarlatina. Among the 87 deaths from all causes registered in Belfast are 1 from simple

continued fever, 1 from enteric fever, and 10 from diarrhoea. The 38 deaths registered in Cork comprise 1 from typhus, 1 from whooping-cough, and 3 from diarrhoea. One of the six deaths registered in Waterford was caused by typhus.

In the Dublin Registration District the births registered during the week amounted to 180—76 boys and 104 girls; and the deaths to 125—63 males and 62 females.

The deaths represent an annual rate of mortality of 18·5 in every 1,000 of the estimated population. Omitting one death of a person admitted into a public institution from a locality outside the district, the rate was 18·3 per 1,000.

Twenty-nine deaths from zymotic diseases were registered, being 1 over the number for the preceding week, but 7 under the average for the 38th week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 1 from whooping-cough, 3 from enteric fever, 17 from diarrhoea (including 13 deaths of children under 5 years of age), 1 from dysentery, &c.

Only 2 cases of scarlatina were admitted to hospital during the week, being 3 under the admissions for the preceding week, and 5 under the number for the week ended September 8. Five scarlatina patients were discharged during the week, and 19 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted during the week is 15, being a decline of 1 as compared with the number for the preceding week. Four patients were discharged, and 48 remained under treatment on Saturday, being 11 over the number in hospital on Saturday, September 15.

Two typhus patients were admitted, and 2 were discharged. There were only 4 cases of the disease in hospital on Saturday, September 22.

The returns show a further decline in the mortality from diseases of the respiratory system—the number of deaths from these causes registered during the week being 9, or 15 below the average for the corresponding week of the last ten years, and 4 under the number for the week ended September 15. Six of the 9 deaths were from bronchitis.

In the week ending Saturday, September 29, the mortality in twenty-eight large English towns, including London (in which the rate was 16·0), was equal to an average annual death-rate of 18·3 per 1,000 persons living. In Glasgow the rate was 19·3; and in Edinburgh it was 13·9.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 22·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·3 per 1,000, the rates varying from 0·0 in nine of the districts to 6·9 in Waterford—the 12 deaths from all causes registered in that district comprising 3 from diarrhoea. Among the 102 deaths from all causes registered in Belfast are 2 from scarlatina, 4 from enteric fever, and 10 from diarrhoea. The 28 deaths registered in Cork comprise 1 from scarlatina, 2 from typhus, 2 from whooping-cough, and 1 from diarrhoea. One of the 3 deaths registered in Lisburn was caused by enteric fever.

In the Dublin Registration District the births registered during the week amounted to 253—120 boys and 133 girls; and the deaths to 165—96 males and 69 females.

The deaths represent an annual rate of mortality of 24·4 in every 1,000 of the estimated population. Omitting the deaths (5) of persons admitted into public institutions from localities outside the district, the rate was 23·6 per 1,000.

Thirty-two deaths from zymotic diseases were registered, being 8 over the number for the preceding week, but 3 under the average for the 39th week of the last ten years. They comprise 1 from measles, 1 from scarlet fever (scarlatina), 4 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 1 from enteric fever, 16 (13 of which were deaths of children under 5 years of age) from diarrhoea, 2 from dysentery, &c.

Five cases of scarlatina were admitted to hospital during the week, against 2 for the preceding week. Five scarlatina patients were discharged, and 19 remained under treatment on Saturday, being equal to the number in hospital on Saturday, September 22.

The number of cases of enteric fever admitted during the week is 11, being a decline of 4 as compared with the number for the week ended September 22. Four patients were discharged, and 55 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

Three cases of typhus were admitted against 2 for the preceding week: 5 typhus patients remained under treatment in hospital on Saturday.

Twenty deaths from diseases of the respiratory system were registered, being 11 over the number for the preceding week, but 2 under the average for the 39th week of the last ten years. They comprise 9 from bronchitis and 8 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 6, the mortality in twenty-eight large English towns, including London (in which the rate was 16·5), was equal to an average annual death-rate of 18·2 per 1,000 persons living. In Glasgow the rate was 17·9; and in Edinburgh it was 15·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 18·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in nine of the districts to 5·2 in Armagh—the 2 deaths from all causes registered in that district comprising 1 from scarlatina. Among the 70 deaths from all causes registered in Belfast are 1 from diphtheria, and 10 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 149—72 boys and 77 girls; and the deaths to 158—90 males and 68 females.

The deaths represent an annual rate of mortality of 23·3 in every 1,000 of the estimated population. Omitting the deaths (4) of persons admitted into public institutions from localities outside the district, the rate was 22·7 per 1,000.

Forty-three deaths from zymotic diseases were registered, being 11 over the number for the preceding week, and 15 in excess of the average for the 40th week of the last ten years. They comprise 2 from measles, 2 from scarlet fever (scarlatina), 3 from typhus, 7 from whooping-cough, 1 from ill-defined fever, 3 from enteric fever, 18 (including 17 deaths of children under five years of age) from diarrhoea, 1 from dysentery, &c.

Five cases of scarlatina were admitted to hospital, being equal to the admissions for the preceding week. Six scarlatina patients were discharged during the week, 1 died, and 17 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, September 29.

The number of admissions of enteric fever cases—which fell from 15, in the week ended September 22, to 11 in the following week—further declined to 6. Eleven patients were discharged, and 50 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

Only 1 case of typhus was admitted during the week: 5 cases of the disease remained under treatment in hospital on Saturday.

Twenty deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, but 4 under the average for the 40th week of the last ten years. They comprise 15 from bronchitis, and 2 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of September, 1888.*

Mean Height of Barometer,	-	-	-	30·179 inches.
Maximal Height of Barometer (on 8th at 9 a.m.),				30·516 "
Minimal Height of Barometer (on 29th, at 9 a.m.),				29·783 "

Mean Dry-bulb Temperature,	-	-	-	53·7°.
Mean Wet-bulb Temperature,	-	-	-	51·7°.
Mean Dew-point Temperature,	-	-	-	49·8°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·360 inch.
Mean Humidity,	-	-	-	87·0 per cent.
Highest Temperature in Shade (on 5th),	-	-	-	65·5°.
Lowest Temperature in Shade (on 30th),	-	-	-	39·2°.
Lowest Temperature on Grass (Radiation) (on 30th),	-	-	-	34·0°.
Mean Amount of Cloud,	-	-	-	60·5 per cent.
Rainfall (on 10 days),	-	-	-	·728 inch.
Greatest Daily Rainfall (on 6th),	-	-	-	·232 inch.
General Directions of Wind,	-	-	-	N.W., W., N.

Remarks.

September, 1888, proved a fine month, with very high barometer, variable light winds, a scanty rainfall, low temperature, and frequent fogs. The prevailing winds were from polar quarters—from N.W., N., and E. An anticyclonic distribution of pressure held over the British Islands and Central Europe during the greater part of the month, and in Dublin the barometer remained continuously above 30 inches from the evening of the 6th to the night of the 27th.

In Dublin the mean temperature (54·4°) was—as in 1887—decidedly below the average (55·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 53·7°. In the twenty-three years ending with 1887, September was coldest in 1866 and in 1882 (M. T. = 53·0°), and warmest in 1865 (M. T. = 61·4°). In 1880, the M. T. was as high as 58·6°; in the year 1879 (the “cold year”), it was 54·3°; and in 1887, it was 54·0°.

The mean height of the barometer was 30·179 inches, or 0·262 inch above the average value for September—namely, 29·917 inches. The mercury marked 30·516 inches at 9 a.m. of the 8th, and fell to 29·783 inches at 9 a.m. of the 29th. The observed range of atmospherical pressure was, therefore, only ·733 of an inch—that is, a little less than three-quarters of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 53·7°, or 3·9° below the value for August, 1888; that calculated by Kaemtz’s formula—viz., $\text{min.} + (\text{max.} - \text{min.} \times \cdot 41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 53·4°, or 1·7° below the average mean temperature for September, calculated in the same way, in the twenty years, 1865–84, inclusive (55·1°). The arithmetical mean of the maximal and minimal readings was 54·4°, compared with a twenty-three years’ average of 55·8°. On the 5th the thermometer in the screen rose to 65·5°—wind N.W.; on the 30th the temperature fell to 39·2°—wind N. The minimum on the grass was 34·0° on the latter date. The rainfall was only ·728 of an inch, distributed over 10

days—both rainfall and rainy days were much below the average. The average rainfall for September in the twenty-three years, 1865-87, inclusive, was 2·288 inches, and the average number of rainy days was 15·0. In 1871 the rainfall in September was very large—4·048 inches on, however, only 13 days. On the other hand, in 1865, only ·056 inch was measured on but three days.

A solar halo appeared on the 27th. High winds were noted on only 3 days, and did not attain the force of a gale on any occasion. Hail fell on the 6th. The atmosphere was foggy on the 8th, 9th, 15th, 17th and 5 following days, and on the 28th. Heavy dews and wet fogs were experienced at night during the anticyclonic period of about the middle of the month.

On Saturday, September 1st, pressure gave way quickly, the wind backed to S.W. and freshened to a stiff breeze, with increasing cloud, slight showers, and a rising temperature.

During the week ending Saturday, the 8th, the weather was changeable, with prevalent W. to N.W. winds. Until Friday atmospherical pressure was low in the North, and many secondary depressions passed in an easterly direction across Ireland and Great Britain. At the close of the week an anticyclone, in which the barometer stood above 30·50 inches, advanced over Ireland from the Atlantic, its easterly movement being accompanied with a shift of wind towards N., a falling temperature, and drier and brighter weather. Showers fell on several days, but heavily on Thursday alone. On that day hail was observed, and thunder was heard at Monkstown, Co. Dublin. In Dublin the mean height of the barometer was 30·076 inches; pressure ranged between 29·872 inches at 9 a.m. of Tuesday, and 30·516 inches at 9 a.m. of Saturday. The mean dry-bulb temperature, deducted from observations taken daily at 9 a.m. and 9 p.m. was 55·8°. The mean of the daily maxima and minima was 56·4°. Temperature rose to 65·5° on Wednesday (wind, W.S.W.), and fell to 43·3° on Saturday (wind N.). Rain fell on four days to the amount of ·304 inch—of this quantity ·232 inch was registered on Thursday, when hail fell with the rain. There was a slight smoke-fog on Saturday evening.

In the second week (9th-15th, inclusive) quiet dry weather prevailed generally. The type of distribution of atmospherical pressure was chiefly anticyclonic. At first temperature was very low—the maximum on Sunday being only 53·7°. The nights were cold, and heavy dews fell. On Friday the barometer gave way considerably, and at night a good deal of rain fell, as a shallow V-shaped depression came in from the westward. The wind was throughout light and variable; on Sunday it blew from N.E., on Monday and Tuesday from N.W., then from S.E., and finally on Saturday from S.W. and N.W. In Dublin the mean height of the barometer was 30·310 inches—pressure ranged from 30·473 inches

at 9 p.m. of Wednesday, to 30·068 inches at 9 a.m. of Saturday. The mean temperature, deduced from readings of the dry bulb thermometer taken daily at 9 a.m. and 9 p.m., was 54·2°; that deduced from the daily maxima and minima was 54·3°. Temperature rose to 64·1° on Friday (wind, (S.E.), and fell to 42·4° on Thursday (wind, S.E. also). Rain fell on Friday night to the amount of ·119 inch, and on Saturday ·011 inch was registered—total precipitation ·130 inch on two days.

Throughout the week ending Saturday, the 22nd, the weather was governed by a large area of high atmospherical pressure (anticyclone), which stretched across central Europe from west to east. The changes in pressure were slight within the limits of the anticyclone, but on Friday a decided depression passed across the north of Scandinavia. Quiet, cool weather accompanied the anticyclone. At first the sky was clear, but dense wet ground fogs at night were finally followed by dull, cloudy days, and the week closed with gloomy weather. In Dublin the mean height of the barometer was 30·303 inches; the highest reading was 30·352 inches at 9 a.m. of Tuesday, the lowest was 30·260 inches at 9 p.m. of Saturday. The extreme range of pressure was, therefore, only ·092 inch. The mean temperature deduced from readings of the dry bulb thermometer taken daily at 9 a.m. and 9 p.m. was 52·1°. The mean of the maximal and minimal daily temperatures was 53·4°. The thermometer rose to 61·7° on Monday (wind, N.N.W.), and Wednesday (wind, E.N.E.), and fell to 43·3° on Tuesday (wind, E.N.E.). At some inland stations the diurnal range of temperature was very large on several days. No rain fell, but the ground was watered by the heavy dews and wet fogs, which were the chief phenomena of the week.

During the week ending Saturday, the 29th, the weather remained favourable, although it was less settled than in the previous week. At first the atmosphere was very hazy and the amount of cloud was large. An extensive but shallow area of low pressure formed over southern England, St. George's and the English Channels, and France, on Sunday and Monday, causing rain or showers and some thunderstorms in those regions. On Tuesday a strong easterly wind blew in the Irish Sea. Wednesday and Thursday were fine, but on the latter day the sky became overcast, a solar halo appeared in a canopy of "sheet-cirrus," and rain fell in the evening and at night. Friday and Saturday were mild, cloudy days. On Saturday afternoon a shift of wind from W. to N. took place, some showers fell and temperature, which had been comparatively high, gave way rapidly. In Dublin the mean height of the barometer was 30·066 inches, or ·237 inch below the mean for the preceding week. Pressure rose to 30·270 inches at 9 a.m. of Wednesday, and fell to 29·783 inches at 9 a.m. of Saturday. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 53·6°. The arithmetical mean of the highest and lowest

daily temperatures was 54·4°. Temperature was highest, 62·8°, on Friday (wind, S.S.E.), and lowest, 45·9°, on Saturday (wind, N.) Rain fell on three days to the amount of ·255 inch. On Thursday the measurement was ·210 inch. A solar halo was seen at noon of that day.

Sunday, the 30th, was a clear cold day, with bright sunshine at first and a crisp air and northerly breeze. The minimal temperature on this day was 39·2°.

The rainfall in Dublin during the nine months ending September 30th has amounted to 17·992 inches on 131 days, compared with 10·968 inches on 112 days during the same period in 1887, and a twenty-three years' average of 19·803 inches, on 143·1 days.

At Greystones, Co. Wicklow, the rainfall in September, 1888, was ·67 of an inch, distributed over only 5 days. Of this quantity, ·36 of an inch fell on the 28th, and ·26 of an inch on the 1st. Since January 1, 21·63 inches of rain have fallen at Greystones, on, however, only 91 days.

PERISCOPE.

CARDIOCENTESIS; OR, ASPIRATION OF THE CARDIAC CHAMBERS, MORE ESPECIALLY OF THOSE ON THE RIGHT SIDE.

M. I. BRUHL (in *Le Progrès Médical*, December, 1887) says that cardiocentesis may be considered as a practicable operation, though not to be attempted except when it appears that there is no other effective mode of treatment. The indications for cardiocentesis are—an over-distended right heart, without any organic affection of the valves, the systole being at the same time weak, and the peripheral vessels empty. All these conditions must exist together. The operation must be done early. In presence of the above symptoms, bleeding from the veins of the arm would be useless. The method of performing cardiocentesis is simple. The needle should be a small capillary trocar, with cannula, about 1½ mm. in diameter. After the thoracic wall has been traversed, it must be pushed into the heart with one movement, with the patient in a position midway between lying and sitting. The amount of blood to be removed varies with the case, bearing in mind that blood removed directly from the heart represents in effect six or eight times that removed from the arm in ordinary bleeding. Either the right auricle or the right ventricle may be punctured. The former may be reached through the third or the fourth right intercostal space; the puncture must be made close to the sternum, to avoid the internal mammary artery and vein. The third space is to be preferred because it is larger; and there is danger, if the fourth space be selected, of wounding the tricuspid valve, the coronary artery, or the intra-cardiac nerve-ganglia. The ventricle may be reached

by a puncture made in the fifth left intercostal space, three centimetres from the left sternal border. *Complications.*—Wound of the coronary artery, only possible when the puncture is made in the fourth right space, led in one case to rapid death from bleeding into the pericardium. Wound of the aorta has happened twice—once to Westbrook, in whose case the aorta was pricked but not penetrated. The second instance was in a case under the care of Dr. Shingleton Smith; the puncture was made by Mr. Dacre. The author concludes that—1. Cardiocentesis is a practicable operation, not dangerous in the majority of cases. It is most applicable to cases of dilatation of the right heart, without any organic lesion. 2. Either the right auricle or ventricle may be punctured at the sites mentioned above; the use of the aspirator renders the operation more easy. 3. Puncture of the right ventricle is to be preferred, because the greater thickness of its walls gives less likelihood of tearing the muscle, and so bringing about hæmo-pericardium; and because the auricle acts rather as a reservoir than as a propeller of the blood, and therefore emptying the auricle does not much diminish the work of the heart. 4. Cardiocentesis acts both by mechanically exciting the heart and by relieving it of blood. 5. More experience is necessary to pronounce definitely on the operation, the object of the paper being to show that it is possible, and not to be rejected without consideration.—*Bristol Medico-Chirurgical Journal*, March, 1888.

STRAMONIUM POISONING.

W. F. CONNERS, M.D., Oil City, Pa., reports the following case:—On the evening of October 17th I was requested to see a mother and her six-year-old son, who were acting in a strange manner. I found both wife and child staggering around the room, unable to sit or stand. The wife said she had taken some sage tea, which at first made her head ache, and then she got so dizzy that she could do nothing but turn round. She had taken the tea made from two drachms of the dried herb, while the boy had taken that of one drachm. The pupils were dilated, the eyeballs were suffused, conjunctiva congested, the face flushed, the head oscillating from side to side when the patient was held, with a disposition to turn the head forcibly to the right. I injected half a grain of morphin into the mother's arm, and a quarter of a grain into that of the son, and repeated it every half hour until four doses had been taken, supplementing the same with whisky and strong coffee without milk or sugar. Previous to giving the morphin I gave the mother a large dose of pulverised ipecac, followed by what tepid water she could be induced to take, without causing emesis. The boy fought us so that we could not give him any. After the second injection the vertigo was much less. The pulse at first in the mother ranged between 90 and 100, and was thready; in the boy, between 120 and 130, and lacked volume, which began to

return on the administration of the morphin and whisky. After the fourth dose of morphin had been given they both dropped into a quiet sleep, which lasted several hours. During all the time the mother would answer intelligently when spoken to, but would at once relapse into her confused state. I left them at 2 30 a.m., returning at 8 a.m., to find the mother suffering from an intense occipital pain, which lasted several days. The boy, who had several copious passages during my absence, was feeling quite well, though the pupils were still unusually dilated, and his face flushed.—*New York Med. Journal*, Feb. 25th.

AN ABDOMINAL SALPINGOTOMY IN THE LAST CENTURY.

A RUSSIAN lady, Mrs. Tkatchef, contributes to a recent issue of the *Gazette Hebdomadaire des Sciences Médicales de Montpellier* an interesting account of a case in which, in the year 1784, Dr. Charles Augustus Seydel, of Sarepta, in the province of Astrakan, Russia, diagnosed an ovarian tumour as large as the head of child two years old, attached to the uterus by a pedicle. As his patient continued to suffer severely, in spite of ordinary methods of treatment, he decided to attempt the removal of the tumour by laparotomy. On the 21st of February he opened the abdomen by an oblique incision extending from the umbilicus to the right inguinal ring. The adhesions were found to be such as to render the removal of the tumour impracticable, and it was discovered that the mass was not an ovarian tumour, but an enlargement of the Fallopian tube. It was tapped and drained, giving issue to a thick, chocolate-coloured liquid. During the operation the protruded intestines were protected with a towel soaked in warm milk. The abdominal wound was closed at first only with a plaster, but afterward with sutures. For the first few days the discharge from the sac, a thick and foetid liquid, was removed at stated times with a silver tube, but, as this grew more and more unsatisfactory, the doctor sucked it out with his mouth four times a day. The patient had fever for about a week, after which she improved steadily, and the opening finally closed. She was heard from two years after the operation, and was then in perfect health. A decoction of cinchona bark and various balsamic preparations were employed in the treatment of the wound, and care was taken to prevent adhesion of the intestinal coils to the peritoneum by interposing pieces of linen soaked in oil of roses.—*New York Medical Journal*, Feb. 11th, 1888.

ERRATUM.

Vol. LXXXVI. No. 202. Third Series. October, 1888. Page 319, lines 3 and 2 from bottom of page, for "Leyden, and Senator Wood, of Philadelphia, and others" read "Leyden and Senator; Wood, of Philadelphia; and others."

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NOTICES TO CORRESPONDENTS.

In future no papers will be inserted as "Original Contributions" except on the distinct understanding that they are sent for publication to this Journal alone, and that only abstracts of them (with due acknowledgment) shall afterwards appear elsewhere.

Authors of "Original Communications" will please consider themselves bound in honour to a strict observance of this understanding.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*On the Action of Certain Drugs on the Utero-Ovarian System.** By LOMBE ATTHILL, M.D.; President of the King and Queen's College of Physicians; ex-Master, Rotunda Hospital.

MUCH obscurity exists as to the action which medicines exercise on the utero-ovarian system, and consequently the greatest empiricism prevails in prescribing for cases in which the organs referred to are engaged. Indeed, I think it would be difficult to determine whether more injury is inflicted on women from the administration of unsuitable drugs, or from the withholding, from some prejudice or insufficient cause, such as the appearance of menstruation, of medicines in themselves proper.

The great majority of females are under the impression that no medicine of any kind should be taken during the continuance of the menstrual flow, and that to take even a mild purgative would be injurious, and many practitioners share in this unfounded prejudice, consequently the bowels are allowed to become constipated, and discomfort, and even injury ensue; ordinary tonics are discontinued, and such medicines as iron and arsenic are prohibited, without any rational grounds existing for all this; while, on the other hand, the so-called emmenagogues are prescribed in various forms of amenorrhœa at random, or as a mere routine, with the result that they in general prove useless, and sometimes positively injurious.

* Being the Inaugural Address delivered in the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, November 16, 1888. [For the discussion on this paper see page 527.]

I have for many years been in the habit of directing my patients to continue taking the medicine I have prescribed during menstruation, and from carefully questioning them am perfectly satisfied that none of the ordinary medicines, taken in moderate doses, produce any effect on the function, and it is to be doubted if the great precautions taken by many women during its continuance are, on physiological grounds, necessary.

To this statement one exception must be made; drastic purgatives, taken in large doses, do seem in many women to increase the menstrual flow, but when this does occur it is evidently due to an increased blood-supply sent to the uterus, in consequence of the stimulating action of the drug on the intestines, which lie in such close contact with it.

But a much more important question arises when we come to consider the action of drugs in cases in which menstruation (*a*) does not appear at all, or very irregularly, (*b*) is in insufficient quantity, or (*c*) is unduly profuse. The medicines usually prescribed for the two first of these classes of cases are those termed "*Emmenagogues*," that is, "medicines which, by their stimulating action on the uterine fibre, (1) directly assist in restoring disordered menstruation, as ergot, savin, and quinine, or (2) by removing the cause of the suppression, allow the discharge to return, as iron, aloes, strychnine, &c."—("Whitla's Pharmacy," p. 128). Putting out of consideration the second class of drugs here specified, I wish to raise the question whether there are any which "directly assist the restoration of disordered menstruation by their action on the uterine fibre." In fact, are there any *emmenagogues*, in this sense at all, and does stimulation of the uterine fibre influence the production of menstruation? I am carefully excluding at present all cases in which menstruation is too profuse or recurs too frequently, for the medicines useful in such cases should not, of course, be termed *emmenagogues*.

The first question is, does ergot, savin, quinine, or even strychnin, in medicinal doses, produce any appreciable effect on the muscular fibres of the normal uterus? For in the great majority of cases in which amenorrhœa exists the uterus is in a normal condition. To me it seems that writers and practitioners assume that these drugs have this effect, without taking any trouble to watch their action, and without sufficient grounds to justify their belief. For my part I doubt it. Absolute proof there can be none, and the theory seems to rest on the fact that ergot has, under certain circumstances,

an effect on unstriped muscular tissue; but when we come to test the theory by actual practice it seems to me that the facts observed do not support it.

Quinine is administered daily in doses from 2 to 10 grains to females; but what practitioner has ever observed from its administration any symptoms indicating its having a stimulating action on the uterine fibre? I have repeatedly continued its administration during the menstrual period, and never observed it to produce any pain or discomfort, which it might be expected to do if it induced contraction of the uterine fibre, nor has it ever once among my patients exercised any influence on the amount or duration of the period. My experience of the effects of strychnin is the same. Again, I have given ergot alone, or combined with other drugs, as an emmenagogue, and have never known it to have any effect as such. I, therefore, feel satisfied that three of the most potent of the so-called emmenagogues have no appreciable effect on the unimpregnated uterus in its normal condition—normal, I mean, so far as its muscular structure is concerned. And I am forced to the conclusion either that these drugs do not, under such circumstance, produce any contraction of the uterine muscular fibre, or if they do, then that stimulation and contraction of the fibre have no effect in the production of menstruation.

Of the action of *savin* I know nothing. I have always looked on it as a dangerous drug, and one that it is not wise to administer; for to produce any effect on the uterus it must be given in large, and therefore dangerous, doses—further, that any effect it may produce on the uterus is due to irritation propagated from the intestines, just as large doses of *aloes* sometimes increase the menstrual flow. Both medicines may increase, but they will not induce menstruation.

In the preceding observations I have referred to cases in which treatment has been directed with the view of inducing menstruation by mere stimulation of the uterus—a method which I consider irrational, and nearly always useless. But I will most likely be met with the remark that the administration of drugs such as I have referred to is sometimes followed by the occurrence of menstruation; doubtless this is so, but the recurrence of the flow by no means proves that it was the agent administered which produced this effect. Remember, I am at present speaking only of those cases in which there is no constitutional disease to be treated, such as *anæmia*, the cure of which is very likely to be followed by the return of menstrua-

tion, but of women, apparently in other respects healthy, in whom menstruation has been suppressed. In the great majority of these the suppression is due to some local cause, such as congestion, the result of a chill, and in such, nature is pretty sure, at least in most cases, to re-establish the function without the aid of medicines; and as the so-called emmenagogues are usually administered shortly before a period should occur, the drug may easily gain undeserved credit. Not that I am disposed to underrate the value of medicines. I only dispute the *modus operandi* of some, and I express my opinion that the drugs of the class I have specified are not entitled to be termed emmenagogues. I have repeatedly seen menstruation follow on the administration of active purgatives, of which aloes is the one most commonly used, though in plethoric women salines, especially the common Epsom salts, is even better; but then, I believe that these act by unloading the venous system, and not as uterine stimulants, which latter were absolutely contra-indicated.

Here I may remark, though foreign to the actual subject under consideration, that amenorrhœa is not very infrequently met with in women, whose general health is excellent. In them it evidently depends on a local cause which it may not be possible to trace—probably on some obscure affection of the nervous system—and in such patients treatment proves useless, and should not be persevered with. One very remarkable case was that of a young lady, aged twenty-two. She came under my care early in 1884. Being the daughter of an old friend who had left his family in very poor circumstances, I took great interest in her, and I was enabled to keep her under observation for as long as I chose. I tried every medicine possible, including phosphorus and strychnin, without benefit. Then I had recourse to electricity, passing one pole of the battery into the cavity of the uterus; this caused pain, but produced no other effect. After several months I discontinued treatment. I saw the lady not long since; menstruation has not reappeared, but she is in the most robust health. I believe, as a general rule, that so long as the health continues good, and that no unpleasant symptoms, such as headache, flushing, &c., be present, it is unnecessary for the patient to undergo any special treatment with the view of re-establishing the function, and certainly that the so-called emmenagogues should not be administered. But the public, and specially mothers, are very reluctant to follow this advice, believing, as they erroneously do, that the absence of the flow is the cause of illness.

I do not propose to discuss the action of such drugs as iron,

arsenic, strychnin, &c., which are classed as emmenagogues by writers, because "by removing the cause of the suppression they allow the discharge to return," but content myself with saying that it is a misnomer to call them emmenagogues. As well might we call any drug prescribed in a case of incipient phthisis, in which amenorrhœa existed, and which, on the patient's recovery, disappeared, an "emmenagogue," and I trust the word will in time disappear from our works on *Materia Medica*.

But one drug requires a passing remark—I allude to the perman-ganate of potassium, which, on the ground that it yields oxygen to the blood, has recently been much lauded as an emmenagogue. I have prescribed it extensively, and always without result, and my belief is that the theoretic value attributed to it as a therapeutic agent is groundless—at least when administered in the doses usually ordered.

I now turn to the consideration of the action of drugs in cases in which menstruation is too profuse, or in which actual uterine hæmorrhage occurs, putting aside those cases which depend for their origin on abortion, pregnancy, or parturition. Excluding these we find that menorrhagia and metrorrhagia are generally met in connection with—1st, ovarian congestion; 2nd, the presence of uterine tumour; 3rd, malignant disease of the uterus; or 4th, imperfect involution of the uterus, which generally co-exists with a hypertrophical condition of the intra-uterine mucous membrane. This last form I shall dispose of in a few words. It nearly always demands special local treatment, carried out with the view of restoring the mucous membrane to a healthy condition, and unless this be done medicines seldom prove of much value.

The form of ovarian congestion, to which I now allude, must not be confounded with that met with in cases of chronic disease of the ovaries and tubes, and in which, though menstruation may be painful, it is rarely profuse. But it is that form most frequently seen in young females, and occasionally in women who are approaching the climacteric period, and in whom menstruation is preceded by pain referred to one or both ovaries, and sometimes with well-marked mammary sympathies. The discomfort some women suffer before each menstrual period is very great, but it is generally relieved by the appearance of the flow, which is often very profuse. Fortunately this can nearly always be cut short, or entirely prevented, by the timely exhibition of full doses of the bromide of sodium, ammonium, or potassium. It is necessary, however, to commence the administration

of these drugs before the recurrence of the symptoms is expected, which, in the majority of cases, is five or six days prior to the appearance of the flow; and also to see that the dose of the bromide be not less than half a drachm, taken three times a day. I do not think that the addition of ergot or any other drug increases the efficacy of the bromide, but if the woman be plethoric a dose of some brisk saline purgative often materially assists in relieving the patient and in diminishing the loss, which is sometimes excessive.

Of uterine tumours, whose presence may induce hæmorrhage, there are two kinds—the pedunculated polypus and the fibroid. No drug seems to have much effect in checking the loss due to the presence of a pedunculated polypus, but in the case of the true uterine fibroid it is different, and the more perfectly the tumour is surrounded by the muscular tissue of the uterine wall, the more marked will be the effect of treatment.

The medicines known as astringents may at once be discarded as useless in cases of uterine hæmorrhage. I do not believe that tannin, tannic or gallic acid, or any other astringent, has any effect whatever in these cases—indeed their administration is worse than useless. I believe it to be injurious, and the mineral acids seem to me to be of no greater value. Full doses of the tincture of the perchloride of iron have, in my hands, sometimes been of great use in checking the loss, but this was always in anæmic women, and its beneficial effects were probably due to the iron it contains—but at best it is a very unreliable agent. Ergot is the only drug on which I place any reliance, and there is only one preparation of it which is trustworthy.

Some years ago I made a very extended trial of the various preparations of ergot in common use, both by the mouth and hypodermically, and came to the conclusion that none of them contained all the active principles of the drug. Consequently, for many years I have been in the habit of prescribing twenty or thirty minims of the liquid extract B. P. in half an ounce of the infusion of ergot, with, in general, the addition of a small quantity of the liquor strychninæ, with fair results; but I have found the American extract, known as “Squibb’s Ergot,” to be so superior to that of the British Pharmacopœia that I now rely almost entirely on it.

Here is one remarkable example of its good effects:—In October, 1887, I was consulted by a lady, aged about thirty-eight years, and who was the subject of a very large fibroid, which extended from above the umbilicus to within an inch and a half of the vulvæ. Her

sufferings were intense, and she was never free from pain except for a few days at the conclusion of each menstrual period. The interval between each period was only about seven or eight days, the hæmorrhage continuing more or less for twenty or twenty-one, and very profusely for the first week. She had consulted a number of medical men, one of whom had suggested the removal of the tumour, and she came to me mainly with the view of having my opinion on this point, saying she had made up her mind to submit to the operation if I advised it. On the 2nd of December I examined her under chloroform, and then discovered that there were apparently two tumours—one quite movable, the other nearly fixed. The size and position of the fixed tumour induced me to come to the conclusion that unless life was absolutely in danger, an operation would involve too great a risk to be undertaken, and this I told her friends. On the 21st of December, having in the interval put her on iron and arsenic, I prescribed Squibb's ergot—thirty drops to be taken three times a day, commencing before the change was due, and to be continued till the loss had quite ceased; iron and arsenic to be taken in the interval, the ergot to be recommenced before each period. On the 15th of February she reported herself as being decidedly better, and I saw no more of her till the 25th of July last. She was then quite a different person—she suffered very little pain, could walk a considerable distance, had twenty-one days' interval between the periods—which, though still very heavy, lasted but seven days—and were it not that she suffered from discomfort after food and slept badly, would have had little to complain of. As I have not seen this lady since July I think I may assume that she has continued to improve.

A remarkable feature in this case was the relief from pain experienced by the patient, and which was probably due to the tonic contraction of the muscular fibres of the uterus, whereby the blood-supply was diminished and the hæmorrhage lessened.

Ergot is a drug most uncertain in its action in these cases and in the effects it produces. In some it causes pain, and when it does it always, I think, lessens uterine hæmorrhage, the pain being evidently due to clonic contraction of the muscular fibres. But sometimes the same dose of the same preparation which caused pain previously, does not do so on another occasion, though as far as we can judge no change has taken place in the patient's condition. I am inclined to the opinion that ergot will not induce clonic contraction of the uterine fibres, unless something acting as a foreign body be present

in it. I say "acting" as a foreign body, because the mere presence of such in the uterus is not sufficient. Pedunculated polypi are commonly enough met with in the uterus, but their expulsion by painful uterine action is quite rare, and it is most likely that the seat of the tumour is the main element of its tendency to excite uterine action. The portion of the uterus between the entrance of the Fallopian tubes is the sensitive portion of the organ, and it is, in my opinion, necessary for a tumour to be situated there for it to act as a foreign body.

I may here point out that it is very doubtful if ergot ever originates clonic contractions of the uterus during pregnancy, unless the organ is prepared from some pre-existing cause to expel its contents. When engaged formerly in midwifery practice I was in the habit of frequently prescribing ergot as a preventive to *post-partem* hæmorrhage, commencing its administration a week or ten days before the expected advent of labour, and never once had I reason to suppose that it hastened that event—on the contrary, in several the period of utero-gestation seemed to be lengthened. In like manner, in cases of a threatened abortion, I have seen the hæmorrhage checked, and pregnancy proceed normally under the administration of ergot; it seemed, indeed, to act as a uterine tonic, if such an expression be admissible. In others, and perhaps the majority, it seemed to produce no effect at all; in a few it induced clonic spasms, but in these there was always reason to think that the ovum was already blighted. In cases of uterine fibroids ergot will, in general, be found to act most beneficially in lessening hæmorrhage when the tumour is embedded in the muscular tissue, and as thinning of the wall takes place, and as the tumour consequently comes in closer contact with the uterine mucous membrane, the result of its administration will be less satisfactory; but in all cases much will depend on the preparation used and its freshness.

With respect to the action of medicines in arresting hæmorrhage where malignant disease of the uterus exists, I have little to say—none can be relied on. I have sometimes thought that the exhibition of Chian-turpentine, as recommended by Dr. Clay, did good in this respect, but further experience has lessened my faith in it. Tincture of the perchloride of iron, in full doses, also sometimes is useful, but at best any good done is but transitory.

ART. XXII.—*Bologna—the Part which it has played in the History of Anatomy: its Octo-Centenary Celebration.*^a By D. J. CUNNINGHAM, M.D. (Edin. and Dubl.); one of the Delegates from Trinity College, Dublin, to the Commemoration Ceremony at Bologna.

ON the 12th of June, 1888, the University of Bologna celebrated its octo-centenary. The great antiquity of the famous Studium of Bologna renders this an event of interest to students of every class; but to us, who are students of anatomy, it is of especial interest, because it was in this ancient seat of learning that the science of anatomy was revived, after it had fallen into utter neglect in Europe during the barbarous period which we term the Dark Ages.

It would be wrong to allow so important an event to pass without some special notice. I purpose, therefore, devoting my opening lecture this session to an account of the part which Bologna has played in the history of anatomy; and when I have accomplished this I shall give you a brief sketch of the ceremony which took place at the celebration festival.

The time will not be misspent, because nothing is more calculated to awaken our interest in a subject than a contemplation of the various phases through which it has passed—nothing tends more to stimulate the ardour of a student than the tale told of the struggles undergone and the distinctions won by the early pioneers of the science which he is called upon to study.

The beginnings of anatomy are buried in obscurity. It is said that its study was pursued before the time of Hippocrates, but of this we know nothing with certainty. Hippocrates, who lived about 400 years before the Christian era, undoubtedly possessed some knowledge of the bones. It is stated that he modelled the human skeleton in brass, and caused it to be suspended in the temple of the Delphian Apollo; but although he had some rude general notions of the soft parts, it is extremely doubtful if he ever dissected a human subject.

The same may be said for the great naturalist, Aristotle, the tutor of the Prince of Macedon, who lived about one hundred years later. He knew more anatomy than Hippocrates, but his knowledge was entirely derived from a study of the lower animals.

^a A Lecture delivered to the Anatomy Class of Trinity College, Dublin.

Were it not outside the scope of the present lecture, I should like to dwell for a little on the widely-famed school for Grecian education, which was founded in Alexandria (320 B.C.) by the illustrious Ptolemy. Here, under the enlightened encouragement of these distinguished rulers, learning of all kinds flourished, and the dissection of the human body was for the first time distinctly authorised, and, in all probability, for the first time practised. Herophilus and Erisistratus were the two anatomists engaged in the work. By the orders of Ptolemy subjects were supplied for dissection, and it is reported that he himself took part in the pursuit in order that the blind superstition and ignorant objections of the people might be subdued. The writings of both Herophilus and Erisistratus are completely lost, but their discoveries live in the pages of Galen.

We shall now pass over a period of about 330 years. This brings us to Claudius Galenus, the physician of Pergamus, a great outstanding figure in the history of anatomy. Born in the 131st year of the Christian era, he devoted eleven years to the study of anatomy and medicine, and then returned to his native town at the age of 29. Here he inspired such confidence that the wounded gladiators were confided to his care, and he acquired the greatest distinction by the successful treatment of wounds which had hitherto baffled all the skill of the surgeons.

But it is as an anatomist that we have at present to regard him, and as such he stands unrivalled by all who had gone before him. A true observer, he draws his facts directly from nature, and so great were the awe and veneration in which he was held by succeeding generations of anatomists, that for many centuries to call in question the accuracy of the most trivial statement made by Galen was equivalent to rank herey.

Galen possessed an extensive and accurate knowledge of the bones. He refers to his good fortune in having been able to study two human skeletons in Alexandria, and his osteological facts are for the most part directly drawn from man. It is very evident, however, that in many cases his descriptions were taken from the skeletons of monkeys.* He was profoundly impressed with the importance of anatomy and physiology as branches of medical training, and he advocates the dissection of the human body. Notwithstanding this, it is extremely doubtful if he was ever able to do so

* Thus he describes an intermaxillary bone; he is a little doubtful as to the number of the ribs; and he states that the sternum consists of seven pieces, &c., &c.

himself. The structure of the lower animals, and more especially of monkeys brought to him from Africa, he investigated most fully, and his descriptions of the soft parts have evidently been very largely prepared from these.^a

Such, then, was the condition of anatomy in the second century after the birth of Christ. The sum total of the knowledge which had been acquired may be estimated by the writings of Galen, and these are to be regarded, not only as the embodiment of his own researches, but also as containing the facts which had been ascertained by the anatomists who had lived before him.

Shortly after the death of Galen, which took place near the close of the second century, the light of anatomy became extinguished in Europe. Barbarous hordes began to press upon the Roman Empire, and ultimately, when its power was shattered, learning of all kinds decreased, and Europe sank into the utter darkness of ignorance and superstition.

There is some doubt as to the precise date at which the University of Bologna took origin. One writer considers that it is the lineal descendant of a learned institute, which existed when Bologna was an Etruscan City, called Felsina. With more modesty, but with little more truth, the foundation of the University is ascribed to Theodosius II., in the year 447.

The date which has been fixed by the University authorities themselves is 1088, but there is no documentary evidence to show that this is correct. All that is known is that somewhere about this time a private school of law sprang into existence. Pepo and Irnerius, the illustrious expounder of Roman Law, are the teachers whose names are especially associated with the origin of the Studium.^b

Soon the fame of this self-instituted school began to be noised abroad, and before long students thronged to it from every quarter of Europe. I do not exaggerate when I say that they came in

^a Still it is right to state: (1) that in his 13th Book, "De Usu Partium," he says—"I am determined to set forth the structure and composition of man alone." (2) In his 1st Book, "De Anatomicis Administrationibus," he remarks—"It is necessary to observe and look into every particle, especially in men." (3) In certain cases he draws a comparison between the structure of the ape and that of man, e.g., in the tendons of the foot.

^b Among other ancient Universities may be mentioned Paris, founded in 1107; Modena in 1150; Oxford 1200; Cambridge 1250. Compared with these, Trinity College, Dublin, is comparatively speaking recent. It was founded in 1591, but it did not make a fair start until 1594. In five years, therefore, its ter-centenary will be reached.

thousands. In consideration of this, and of the fact that the common language employed in teaching and writing was Latin, well might Carducci, in his striking commemoration address, exclaim—"O Italy, beloved country! in the miseries of thy bondage thou didst delight in imagining the eagles of victory again flying forth from the Seven Hills over all nations; but, perchance, thy true glory, thy noblest revenge, were to be sought for at Bologna, where, with the tongue of the ancient empire, thou didst proclaim to the very nations who had oppressed thee the new gospel of civilisation, and didst teach them to throw off the yoke of barbarism and again become Roman!"*

Gradually other branches of learning were added to law, and the Bolognese University gained new celebrity as a centre of philosophy and letters. And finally came medicine, but not until the thirteenth century. Thus Tiraboschi, in his *History of Italian Literature*, tells us that in 1250 the degrees of master and doctor, which had previously been given only to jurists and canonists, were conferred upon medical men. Further, to avoid confusion, the various professors had special subjects allocated to them, and a distinction was drawn between physicians and surgeons. Is it not significant of the efficiency of the school that anatomy, chemistry, and botany formed a part of the curriculum?

We are now approaching the time when the revival of anatomy in Europe took place, and from what I have told you of the activity of the early School of Medicine in Bologna, need you be surprised that it was here that it was quickened into life? Mondino de'Luzzi has the honour of having brought it about. Sir Wm. Turner styles him "this father of anatomy."

Mondino, a Milanese by birth, held the chair of medicine in Bologna in the year 1316. We have already seen that, in all probability, Hippocrates did not dissect the human body; apparently Galen did not; superstition forbade it—and any dissection which had up to this time taken place in Europe must have been done surreptitiously. In 1315 Mondino publicly demonstrated the anatomy of two female subjects, and in the following year he undertook the dissection of a third. This boldness on the part of the Bologna Professor gave rise to a considerable sensation at the time, and we are told that, in his dissections, he dared not open the

* This passage is taken from the admirable translation of Professor Carducci's address, which is given in Professor Kirkpatrick's little book entitled "The Octo-centenary Festival of the Bologna University."

head to study the structure of the ear, as this would have been deemed a "mortal sin."

But Mondino also wrote a text-book, which exercised a powerful influence in advancing the study of anatomy. It is rude in its style, it is true, very inaccurate, much of it is copied from Galen, and in many cases the parts are merely indicated and not described. Still, at the time it was considered so masterly a work that we find a statute in the books of the Padua University, which orders the candidates for degrees in medicine to follow the text of Mondino. For two hundred years this law was enforced. We shall not stop to discuss the bad effect produced by such a rigid stand-still regulation. I merely mention it to show the esteem in which the work was held.

The effect produced by the example set by Mondino in holding public demonstrations, and the hold which his book took in the different schools was prodigious. In a short time, in almost every university in Europe in which medicine was taught, there were established public dissections once or twice a year, and during these the parts which were displayed were described from the text of Mondino. To give you an idea of how rudely these were conducted, I may mention that the demonstrator was generally a barber, and the implement which he wielded was a razor.

We cannot pause to take note of the discoveries which were made by Mondino and his successors in Bologna; but we would be doing him an injustice were we to omit to mention that he calls attention to the sigmoid valves of the heart, under the name of *ostiola*, or little doors, and that he comes very near to the discovery of the general principles involved in the circulation of the blood three hundred years before the illustrious Harvey. Like so many others, he stood on the threshold, but was prevented from grasping the full truth by slavish subserviency to the authority of the ancients.

The work commenced in Bologna by Mondino was not allowed to lapse. Alessandro Achillini, a celebrated physician and anatomist, made some important discoveries, and did much to advance the science. He published a commentary on the text-book of Mondino, and he likewise wrote an anatomical treatise of his own. He was an acute observer, but his reputation appears to have depended more upon his fame as a philosopher. So great were his powers as a logician that he was nicknamed "the great Achillinus and the devil." With his profound learning he combined an extreme sim-

plicity of character, and it is stated that in consequence he was frequently imposed upon by his students.^a

But greater than Achillini—greater even than Mondino—was Jacopo Berengario, of Carpi, the next anatomist I have to mention in connection with the Bologna School. In the first instance, a Professor in Pavia, he was called to the Chair of Anatomy and Surgery in Bologna, and he lived there from 1502 to 1527.

The assiduity with which he applied himself to anatomical work was remarkable. He mentions that he dissected over a hundred bodies. He speaks of his long experience in anatomy, and he asserts what no one before him could have done—viz., that all his descriptions have been taken directly from the object. It is clear then that he was no mere copyist—no blind follower of Galen.

So great was his zeal that some authors have been led to charge him with the vivisection of two Spaniards, who were suffering from small-pox, in order that he might study the peristaltic action of the intestines. This is a vile slander, as Lauth, in his excellent History of Anatomy, shows. The grounds upon which the imputation are based are—(1) that he had a hatred of the Spaniards, and (2) that he was banished from Bologna. But Berengario in his writings reproaches, in the strongest manner, Herophilus and Erisistratus, who are supposed to have dissected living criminals in Alexandria, and he explains that only in the course of a surgical operation has he ever applied a knife to the living subject.^b Portal assures us that his banishment was due to the inquietude which was produced in the Inquisition by the free manner in which he had discussed the anatomy of the organs of generation.

With the name of Berengario are associated the *valvulæ conniventes*, the *vermiform appendix*, the opening of the biliary duct into the

^a Achillini gives a good account of the brain; he discovered the malleus and incus; he knew the ileo-cæcal valve, and noticed for the first time the orifices of Wharton's ducts.

^b Fallopius makes the charge, but it is evident he had been misled. The same charge was made against Vesalius at a later date. One thing, however, is perfectly clear, viz., that the early anatomists dissected, in the most ruthless manner, living animals. Tables for the purpose are figured in several of their works, and in the great treatise by Vesalius a pig is represented, bound and ready for dissection. In Helkiah Crooke's work, which may be considered to be the first great treatise on anatomy published in the English language (1615), the author protests against the indiscriminate vivisection of animals. It should be done sparingly, he says, and with the view of elucidating the action of the heart, blood-vessels, intestines, and brain, and by what muscles the different parts are worked.

duodenum, the greater relative size of the female pelvis, and the arrangement of the arteries at the base of the brain.*

In the early part of the sixteenth century Andreas Vesalius appeared. No one before and no one since has done so much to place human anatomy upon a proper footing. Italy cannot lay claim to him by birth, and Bologna can lay only part claim to him as a Professor. He was born in Brussels, and educated in Louvain and Paris. At the early age of fourteen he commenced his anatomical studies under the Parisian teacher Sylvius (Jacques Dubois), and the enthusiasm with which he threw himself into the work may be judged from the fact that he robbed the gibbet of the bodies of executed criminals, and even dissected subjects in his bed-chamber.

In 1536, when only twenty-three years old, he was elected by the Venetian Republic a Professor in the University of Padua. Afterwards he obtained similar appointments in Bologna and Pisa. No greater evidence of the esteem in which he was held could be given than the fact that he was allowed to hold these three Chairs in three different Universities at the same time. His anatomical teaching was confined to the winter months, and he spent a few weeks in each of these cities alternately, demonstrating and teaching human anatomy.

With the increased opportunities which Vesalius now had of studying directly the structure of the human body, his dissatisfaction with the writings of the older anatomists grew apace, and he began boldly to dispute the authority of Galen. Finally, at the age of twenty-five, he commenced his great work upon anatomy—a work which marks a distinct epoch in the history of this science, and constitutes the foundation upon which our modern anatomy was constructed. This *magnum opus* was completed when Vesalius was twenty-eight years old. It was published at Basle under the immediate supervision of the author. While thus engaged he employed his leisure time in preparing a natural skeleton, which is still preserved in the museum of that city.

Vesalius, at the same time, effected a reformation in anatomical drawing. The illustrations which accompany the text—more especially those of the bones and muscles—are most artistic and anatomically correct. Some have thought that these were from

* Portal goes so far as to suppose that he used the method of injection. This is extremely doubtful. Berengario was the first to employ mercurial inunctions for the cure of syphilis. At this period that disease was very prevalent in Europe. Berengario did much to stem its progress. He consequently amassed a considerable fortune before he was banished to Ferrara.

the pencil of the great Titian; but now it is generally admitted that it was not this celebrated artist but his favourite pupil, Johannes Stephanus von Calcar, who drew them.

Vesalius demonstrated in the clearest manner that the anatomy of Galen, which was being applied at that period to the human subject, was not the anatomy of man but the anatomy of the monkey. For this audacious assault upon authority he was attacked in the most virulent manner, and the foremost and most bitter of his adversaries was his old master, Sylvius. In this encounter Sylvius, notwithstanding the abuse and calumnies he heaped upon Vesalius, got much the worst of it. And when at last he was forced to admit that some of the statements of Galen did not correspond with what was found in the human subject, he covered his retreat by insisting that the structure of the human body had changed, *and not for the better*. It was deterioration he saw, not improvement, although the standard of excellence chosen by Sylvius was Galen's description of the ape.

Vesalius was evidently a passionate, sensitive, and masterful man. In pique at the bitter attacks to which he had been subjected, he retired to the Court of Madrid and burnt his remaining papers. His career as an anatomist virtually ended at the early age of thirty.*

Bologna has also the credit of being the school in which Guilio Cesare Aranzio, and Costanzo Varolio taught and worked. For more than thirty years Aranzio, who had the advantage of studying under the great master, Vesalius, held the Chair of Anatomy in the Institute. Varolius is a name we are acquainted with, from the *pons Varolii* of the brain.

During the sixteenth century Bologna no longer stood alone as the one centre in Europe where anatomical investigation was conducted. Her example was followed by the other cities of Italy, and thus we find Eustachius, the contemporary of Vesalius, at Rome; Fallopius, the pupil of Vesalius, at Padua; and Fabricius, the teacher of our own Harvey, in the same University. By degrees also the other countries in Europe lost their veneration for the writings of Galen, and the pursuit of anatomy in a proper spirit became general.

Bologna had fulfilled her mission, and although, during the last

* Vesalius met with a sad end. On his return from a pilgrimage to Jerusalem he was wrecked on the Island of Tante, where it is said he perished of hunger. It is not very clear what led him to undertake this pilgrimage. Different reasons are ascribed by different authors.

three centuries, she no longer stands out as a star of the first magnitude, she has maintained her own as a centre of anatomical thought and training. The Professor at present in the Chair of Anatomy is Luigi Calori.

But I cannot pass on to describe the Centenary Celebration without referring to the work of Galvani, and also alluding to the encouragement which appears to have been given to women in Bologna to engage in anatomical pursuits.

Galvani is a name upon which the University authorities and the City of Bologna appear to dwell with the greatest pride and affection, and well may they do so. During his life they treated him scandalously.* Everyone has heard of his brilliant discoveries in the domain of animal electricity, and the part which Madame Galvani, and the frogs she was preparing for dinner, had in these. In the Rector's Room in the University there is a striking oil-painting, in which Galvani, his wife, and the immortal frog, are depicted.

It has been asserted that women have filled the anatomical chair in Bologna. Certainly both in early times and at present the higher education of women appears to have received every encouragement. Thus, it is related that, in the fourteenth century, Novella Calderini or D'Andrea acted as her father's substitute, and delivered lectures on Jurisprudence, when, through illness or other causes, he could not fulfil his duties. It is further told, that in case her beauty would distract the attention of the students, she lectured behind a curtain. Then there was Properzia de Rossi, who acquired fame as a sculptress; Laura Bassi, in the eighteenth century, who is said to have lectured on Philosophy; and Anna dalle Donne, about the beginning of the nineteenth century, a famous physician and obstetrician. But further, at this moment a lady lectures on the Slavonic languages, having received her appointment directly from the Crown.

In anatomy, although the names of several women are mentioned, it does not appear that any one ever attained the dignity of being elected to the chair, or even to a lectureship. One of those whose names have come down to us, Alessandra Giliani dal Porsiceto, is recorded as having been a most skilful and neat dissector, and as having assisted Mondino in preparing the dissections for his

* Galvani had acquired note as an anatomist before he made his electrical discoveries. He acted as Lecturer on Anatomy in the Institute of Bologna. Having refused to take the civic oath of allegiance to the Cisalpine Republic, "he was barbarously deprived of all his offices and dignities," and reduced to poverty. He died in 1798.

public demonstrations. Another, Anna Morandi or Manzolini, lived in the first part of the eighteenth century. Her husband was an artist, a sculptor, and a modeller in wax. She assisted him in his work, and soon excelled him both in her knowledge of anatomy and her skill as a modeller. Her models of the pregnant uterus were particularly fine.

The centenary of a University which, independently of its great history, lays claim to the proud title of *ALMA MATER STUDIORUM*, is no ordinary centenary, even in an age in which celebrations of this kind have been unusually plentiful. The invitation, therefore, which Bologna issued was very largely accepted in every quarter of the globe. The Universities in Germany were most numerous represented, no fewer than twenty having sent delegates. Great Britain and Ireland sent representatives from thirteen, or, if we include the colonies, from eighteen Universities, and America from fourteen. Eighteen Universities in Austria, and eight in France, were represented. In all, 103 foreign Universities answered the summons, and from these 172 delegates were sent. A very large proportion of these were Professors of Law, but, as might be expected, Medicine in all its branches was well represented.

Six delegates went from Ireland—viz., Dr. Dunne and Dr. Moffat, President of Queen's College, Galway, from the Royal University; Professor O'Ryan from Cork College; Professor Allman from Galway College; and Dr. Haughton and myself from Trinity College.*

The text of the Trinity College Address ran as follows; and when I mention that it is from the pen of Prof. Palmer it is not necessary for me to extol the purity of its Latinity or the excellence of its style:—

“ CANCELLARIUS, DOCTORES, ET MAGISTRI UNIVERSITATIS
DUBLINENSIS UNIVERSITATI BONONIENSI S. P. D.

“ *PERGRATUM nobis fecistis quod tam benevolo animo nos vocavistis in societatem gaudii, quo octingentesimum natalem Universitatis vestrae celebraturi estis. Digna quidem tam alta vetustas est quae splendido ritu et doctorum virorum concursu honoretur. Quippe*

* The British delegates were:—*Aberdeen*, Professor Harrower; *Cambridge*, Professors Adams, Jebb, and Middleton; *Durham*, Mr. Hastings Rashdall; *Edinburgh*, Principal Sir William Muir, Bart., Sir H. Oakley, and Professor Kirkpatrick; *Glasgow*, Professors Jebb, Ramsay, and Ferguson; *London*, Dr. Pole; *Victoria University*, Professors Conway and Munro; *Oxford*, Professor Holland, and Messrs. Spencer, Stanhope, Symonds, and Vernon; *St. Andrew's*, Principal Donaldson and Professor Knight. The Universities of Bombay, Adelaide, Sydney, Otago, and Wellington were also represented.

Bononiam omnibus quae hodie usquam sunt Universitatibus aevo antecellere notum est: immo ceteris gentibus de rhetore conducendo vixdum cogitantibus, iuris, medicinae, artium quae dicuntur liberales studiis, iam tum Bononia florebat. Vivit adhuc fama IRNERI qui facem obscuro saeculo praetulit, iurisque Romani studium prope obsoletum apud vos revocavit. Quae tellus non novit VESALIUM qui fabricam corporis humani curiose scrutatus internas caulas canalesque adhuc ignotas detexit, ita ut creator Scientiae Anatomicae iure audiverit? Vestrum est praegrande nomen GALVANI, cui aura electrica, quae tot miracula peperit, plura paritura est, primo afflavit; vestra fama illustrissimi excultissimique viri MEZZOFANTI, Linguae Graecae apud vos olim Professoris, qui ad ordinem Cardinalium mox provectus, quadraginta tribus gratulantibus patrio cuique sermone respondit. Nec magnorum virorum tantum series Bononiam illustravit. Feminae quoque ingenio clarae, quod raro alibi licuit, litteras artesque apud vos promoverunt. Non tam aversus equos a nobis sol iungit, ut ignoremus nomen AGNESIAE, quae sui aevi mathematicos doctrina superavit, cuius scilicet linea curva, Maga quae dicitur, etiam nunc philosophos delenit: aut ANDREAM, inter paucos viros eloquentem, facie vero formosiore quam quae tuto ab auditoribus spectaretur. Sed de his multisque aliis scribentes nos deficiat dies. Bononiae numquam defuturos qui tam pulchram famam per longa saecula propagent ex animo precamur, illud nequaquam metuentes

“Ne vestrum tangat scabra robigine nomen

“Haec atque illa dies atque alia, atque alia

ut suavissimi poetae eiusdemque olim Bononiae vicini verbis utamur.

“Ergo humanissimae epistolae vestrae libenter obsecuti cum bono auspicio duos nostrates mittimus, qui vobis nostro nomine praesentes gratulentur, omniaque fausta tam bono die precentur, Samuelem Haughton, collegii nostri e Sociis Senioribus, et Daniele Iohannem Cunningham, Anatomiae et Chirurgiae Professore: quorum hic familiam ducit in arte sua, ille vir primarius est in omnibus quae ad rerum naturae scientiam pertinent: quos maiorem in modum vobis commendamus.

“Dabamus Dublini x Kal. April. MDCCCLXXXVIII.

“Scribendo adfuerunt

“IOHANNES THOMAS BALL, LL.D., *Vice-Cancellarius.*

“GEORGIUS SALMON, S.T.P., *Praepositus.*

“IACOBUS GUILIELMUS BARLOW, M.A.”

When the delegates arrived in Bologna, the preparations for their reception were found to be in a very backward condition. Everything apparently had been left over to the last moment, and it was evident that the authorities had not anticipated the many difficulties attending the reception of 182 foreign representatives, the majority speaking different languages, and comparatively few possessing a colloquial knowledge of Italian. It was not surprising, then, that the arrangements were found to be inadequate. This, whilst it produced some discomfort and entailed a good deal of trouble on the part of the delegates, happily did not mar the success of the celebration; and although I have alluded to it, I would not for a moment impute to the Bologna University any want of hospitality. Far from this, it was most evident the one desire of the authorities was to do everything in their power to make the festival an agreeable one to their foreign guests. And now that we look back upon the proceedings after a lapse of nearly five months, this personal matter sinks into insignificance beside the grand effect which was produced by the celebration when looked at as a whole. It will, therefore, be understood that we have no sympathy with those who were inclined to resent the defect in organisation to which I have referred, as a slight upon themselves or the Universities they represented. The function was not to be regarded from a strictly academic point of view. The reception of the delegates formed a small part of the great festival. The presence of Royalty, and the intimate relationship which had existed so long between the Bologna University and Italian politics, rendered the celebration not a mere gathering of representatives from the different learned bodies in Europe, but a great national manifesto—an outburst of sentiment in which outsiders, in many cases, could hardly be expected to participate.

On Monday morning, the 11th of June, the King and Queen of Italy, accompanied by the Heir-apparent, the Prince of Naples, entered Bologna, and the festival commenced. Not much of interest took place on that day. In the forenoon the delegates were received by the Sindaco; in the afternoon a fine equestrian statue of King Victor Emanuel II. was unveiled by King Humbert; and in the evening the delegates met with the view of choosing the speech-makers for the ceremony on the ensuing day. This meeting was a scene of considerable confusion, owing to the babel of tongues and the difficulty that was experienced in satisfying the claims of the different countries. Finally the matter was adjusted to the

satisfaction of everyone by giving a speech to each nationality. In place of three speeches, as originally proposed, the number rose to about fifteen—not a pleasant prospect for those of us who were not polyglots, and were condemned to sit through them all. As it so turned out, however, we were wrong in supposing that a great variety of languages would be heard on the following day. The great majority spoke in Italian; of these I may instance the representatives of Germany, Austria, Hungary, Denmark, Norway and Sweden, Portugal, Romania, and America. The others spoke in French, Greek, and Latin. The representative from Holland made a distinct point by quoting, at the end of his speech, a line from Dante:

"Tu duce, tu signore, tu maestro."

Professor Jebb, of Glasgow and Cambridge, was selected to act as spokesman on behalf of the Universities of Great Britain and Ireland.

Later on in the evening a very brilliant reception was given by Queen Margherita in the Municipio, where the delegates had an opportunity of becoming acquainted with each other, and a few of the more distinguished had the honour of being especially presented to Her Majesty.

On Tuesday, the 12th of June, the true function took place. At nine o'clock in the morning the delegates, to the number of 341, comprising those from the different Universities of Italy, met in the court of the New University in academic costume. A procession was then arranged—the students in front, next the delegates in alphabetical order, according to the countries which they represented, and the Bologna Professors, with the University banner, in the rear. Marshalled in this order, the procession started for the Old University or Archiginnasio. A finer spectacle could hardly be conceived, although it was difficult for one who took part in it to appreciate its full grandeur. Imagine a clear, bright Italian day; the streets, balconies, windows, every inch, every point of vantage occupied by excited citizens and gaily-attired ladies. Through this crowd, and between the quaint, graceful arcades which flank either side of the streets, the procession slowly moved. As each strange costume came under the eyes of the sightseers, the eager question was asked, "What country?" Then resounded the cries of welcome:—"Viva la Germania!" "Viva l'Inghilterra!" "Viva l'Irlanda!" From a balcony on the Municipio the King and Queen looked down upon the academic pageant as it passed below, and of all the

nationalities the British were the only representatives who showed their appreciation of the Royal presence by raising a hearty cheer. As the procession neared the Archiginnasio (I think it was in the Via Farini), the ladies of Bologna threw down upon the delegates flowers, and sprigs of oak and laurel—a delicate piece of flattery which was highly appreciated. Lastly, as it entered the Piazz di Galvani, and came to the front of the Archiginnasio, it passed between the students, who were drawn up in two rows. They were in a state of frantic excitement, and hoarse with their congratulatory cries; and in the enthusiasm of their welcome they shook the hands of every delegate they could get at. I have something more to tell you of these pleasant, happy fellows—the youth and hope of Italy—but not just at present.

The commemoration ceremony was held in the court of the Archiginnasio, which was covered by an awning of red and white, to keep out the scorching rays of a blazing sun. The King and Queen were seated on a dais erected on the side opposite the entrance; in the gallery immediately above this was placed the orchestra, whilst the arcades and galleries on the other three sides were filled with gaily-dressed ladies and other spectators. In the body of the court were seated the delegates.

The proceedings were opened by the singing of an ode—specially written for the occasion—by a prima donna named Signora Catanio. The Rector then stated briefly the object of the commemoration. Paolo Boselli, the Minister of Public Instruction and one of the delegates from the University of Genoa, followed with a graceful speech, in which he traced the academic history of Bologna, and specially alluded to some of the distinguished women who had been connected with the University—viz., Properzia de Rossi, Laura Bassi, Clotilde Tambroni, and the authoress of the witches' curve, Gaetana Agnese.

When Boselli had finished, Professor Carducci, the famous Radical poet of Italy, entered a richly-draped tribune, and commenced his centenary oration. I have already quoted a passage from this singularly eloquent address. He spoke for rather more than an hour, and then the delegates presented their congratulatory addresses. This part of the programme could hardly be said to be well managed; as each country was called the representatives went up to the throne in a confused bunch, the spokesman elbowed his way to the front, and delivered his speech. When he had finished the addresses were presented to the Rector without any attempt at

order or proper formality. Professor Jebb, who introduced the delegates from Great Britain and Ireland, made his speech in Latin. He spoke as follows:—

“Hoc die felicissimo, cuius memoria nobis, dum vivemus, obversabitur, posteritati tradetur sempiterna, salvere iubemus vetustissimam atque illustrissimam studiorum altricem, quam his tam augustis auspiciis, hac discipulorum doctorumque frequentia, hoc tanto, omnium gentium favore, sæcularia sua octava celebrantem intuemur. Magnopere quidem gaudemus quod ad ferias unice memorabiles agendas vestra nos humanitas vocavit, qui ab omnibus Imperii Britannici partibus fausta Universitatum vota et gratulationes afferimus; alii ab Insulis profecti Britannicis, alii ab Indiæ litoribus, alii ab iis Anglorum Coloniis qui sedes habent sive trans mare Atlanticum sitas sive Crucis Australis sideri subiectas; ut in hac nostra salutatione vix minor cælorum varietas quam animorum concordia cernatur.

“Immortalis est Studii Bononiensis gloria quod iam in sæculo armis magis quam litteris idoneo, iuris Romani disciplinam recolens, eas potissimum artes revocavit per quas ceteræ otium nactæ vigeant, neque solum doctrinæ fructibus ditentur homines, sed ipsa societatis humanæ vincula confirmentur. Si vero ab hoc principali beneficio ad alia transeamus, quot et quales recordamur eiusdem Almæ Matris alumnos, qui vel Theologiæ profuerunt vel Philosophiæ, qui Litteras Artesque luculenter excoluerunt, qui de arte Medicinæ præclare sunt meriti, qui Scientiæ Naturalis fines propagarunt; qua in serie nobilissima, tanquam stellæ radiis haud incertis illæ quidem sed lenioribus elucentes, feminarum quoque illustrium nomina reperiuntur. Iuvat Anglos præsertim commemorare iurisprudentiæ studia a Vacario Oxonii instituta; neque, si ad recentiora respiciatur, illud prætermittere debemus, celeberrimi Scientiarum Instituti Bononiensis conditorem, Ludovicum Marsigli, cum Newtono Cantabrigiensi amicitia fuisse coniunctum.

“Floreat semper Universitas Bononiensis; floreat urbs pulcherrima, Musarum sedes, libertatis arx, Bononia! Quæ dum precamur, hoc etiam liceat precari; valeat antiqua huius loci religio, quo tota olim Europa maiores nostri confluebant, valeat hæc feriarum sollennis celebratio, ad eos animorum affectus fovendos qui inter omnes orbis terrarum gentes pacem ac benevolentiam tueantur.”^a

^a Professor Jebb also contributed to the centenary a Pindaric ode, which was appreciated so highly by the Bologna University authorities that they presented a separate copy to each delegate, along with a translation in Italian verse by Prof. Felliccioni.

The Trinity College address was contained in a handsomely bound volume, and was universally admired. Each page was finely illuminated and decorated with paintings of the wild flowers and antiquities of Ireland. In handing it to the Rector, Dr. Haughton held it open, so as to display the page on which was depicted the Chalice of Ardagh, the Cross of Cong, and two ancient Irish hunting horns. At the same time, in his capacity of President of the Royal Irish Academy, he presented the address from that learned body.

The ceremony was brought to a close by a short Latin oration by Professor Gaudino.

The real business of the day having been satisfactorily disposed of, the afternoon and evening were devoted to feasting and amusement. In the Borsa, at six o'clock, a banquet was given by the Government; but, beyond the mere eating and drinking (both of which, it must be allowed, were excellent), there was little pleasure or profit to be derived from the entertainment. The guests were so arranged around the sides of a large, bare, square hall, that absolutely nothing could be seen, and the few speeches which were delivered were quite inaudible to at least four-fifths of those present. It had one merit, and that was that it was not prolonged. At half-past eight there was a general stampede to the Teatro Comunale, where one of Wagner's operas was performed for the special benefit of the delegates.

On Wednesday the honorary degrees were conferred in the Archiginnasio, in presence of the King and Queen, and a brilliant assemblage of the *élite* and fashion of Bologna. No official list of the honorary graduates was issued, and no announcement had been made to those who were to be thus honoured. The Dean or Head of each Faculty from which the degrees were to be issued read out the names from a list which had, up to that time, been kept a profound secret. In most cases, the names thus read out were inaudible, and even when the Dean contrived to make himself heard, he manipulated the foreign names in such a manner that they could barely be recognised even by the owners.

Dr. Haughton's name had all through been a source of difficulty to the Italians, both in point of spelling and pronunciation; and on this occasion, although we had reason to believe that it was uttered, we altogether failed to distinguish it. The following morning we naturally looked to the newspapers for the official list of the honorary graduates, but here we were disappointed. I shall give you an extract from the principal newspaper of the province (the *Gazetta*

dell' Emilia), which will show how partial the information was:—“Finally, Professor Brugnoli announced the new Doctors of Medicine. They are names well known to modern science—Koch, Kölliker, Liebermeister, Weir-Mitchell, Schiff, Haughton, Schiess, and others, whose names could not be distinctly heard, on account of the great applause which greeted the new Doctors of the Bolognese Studium.” This report was, so far, satisfactory, inasmuch as it showed that we had not been mistaken in believing that Dr. Haughton had been a recipient of this honour.

We have not yet had an opportunity of inspecting the official list of the new graduates—indeed I am very doubtful if such a list has been published; but, if I am not mistaken, Lister, Jonathan Hutchinson, and Sir Spencer Wells, also received the degree in medicine. Time will not permit of my entering into details regarding the degrees issued from the other faculties. So far as we could judge, from our very imperfect information, the names had been selected in every case with great care and judgment.

The ceremony observed in conferring the Doctor's degree of the Bologna University is very interesting. When the graduate presents himself, a massive signet ring is slipped over his forefinger by the Dean of the Faculty and then withdrawn.* The forefinger instinctively tends to close during the process; but the fact that the ring is a very ancient one, and still remains in the possession of the University, speaks well for the skill of the various Deans who have used it. At the same time a diploma, with a fine impression of the University seal, contained in a silver-plated box, is handed to the new graduate.

A very spirited address by Professor Ceneri, the occupant of the

* The ancient School of Salerno, which is even older than the Studium of Bologna, practised the same custom. This School, I understand, is now amalgamated with the University of Naples. There is no graduation ceremony at all equivalent to this in Ireland, but in Scotland the new graduates are what is termed “capped.” In other words, as the graduate comes forward his head is touched by a velvet cap held in the hand of the Chancellor. In St. Andrew's, in former times, the graduate sat during this ceremonial upon an ancient stone seat, still preserved in the University. The Pileus was the Roman cap of liberty—bestowed on the slave when he was enfranchised. It afterwards became the mark of the University man. In Bologna, at one time, when a candidate was admitted as one of the “Doctors,” he was given a *hat*, a book, a ring, and a kiss. In some of the Scotch Universities, it is still the custom to present a book to every Professor when inducted into his office—the meaning is obvious. The ring is a symbol used on many solemn and binding ceremonials—e.g., the wedding ring, the episcopal ring, &c. I am indebted to Professor Mitchell, of St. Andrew's, for this information.

Chair of Roman Law, and a noted criminal advocate, brought the ceremony to a close.

The fourth day of the Festival was devoted to the honour of Galvani. Professor Albertoni gave a lecture in the morning upon his life and work, and in the evening the students placed a laurel crown upon his statue.

I have now come to the most pleasant feature of my narrative, and that is the part which the students of Bologna took in the Centenary Festival. I would hesitate to say that they surpassed the Professors, but so far as an onlooker could judge, they exhibited more unanimity, a greater enthusiasm, and a more striking cordiality. These qualities are perhaps the characteristics of youth, but, in addition, their organisation was undoubtedly more carefully devised, and their arrangements were more satisfactorily carried out. To me the glimpses which I got of their festivities constitute the happiest reminiscence of the celebration.

Large numbers of students from the other Universities of Italy had thronged to Bologna to assist at the festivities. The German students were also largely represented, whilst others had come from France, Athens, and Buda-Pesth. Great Britain and Ireland, in the first instance, was represented by only one student—a delegate from the University of Edinburgh; but later on two representatives put in an appearance from Cambridge. Bologna was thus crowded with students, and of these the Italians were readily recognised by the distinctive caps which they wore. Each Faculty has its own colour—Medicine, red; Law, blue; Arts, green; and the Fine Arts, white. The red-caps were decidedly in the majority. The costumes of the Germans, which probably some of you are familiar with, were very effective. They carried rapiers, and the faces of several were hideous with scars. Markings of this sort had evidently been taken into account in the choice of the delegates from Germany. Two students from Buda-Pesth excited general notice on account of the richness of their academic dress.

The student-delegates, for the most part, arrived on Saturday afternoon, and a magnificent reception was prepared for them. At the railway station the Bologna students, with innumerable carriages and an escort on horseback, awaited the arrival of the train. Some of the Italian Universities had sent presents along with their delegates. Thus Turin sent a huge and richly-decorated cask of wine; from Padua came a splendid mouse-coloured ox with gilded horns and gay trappings; the students from Parma

brought a gigantic Parmesan cheese. The delegates were received with the greatest enthusiasm and the warmest welcome, and immediately a procession was formed. In front went the mounted escort, then followed a student dressed in female attire—airy and light, and with not much skirt—to represent Venus. The offerings of the delegates came next. The cask of wine, drawn by a handsome horse, looked somewhat like a watering-cart, and astride the top of it sat a grotesquely-dressed Bacchus waving his sceptre. Upon the cheese there was an inscription in Latin to the effect that it was “*ab omnibus laudatum.*” The carriages with the delegates followed in the wake of the cheese.

I have often had occasion to admire the vocal powers of our students in Ireland, but pardon me if I say that they are excelled in this respect by their *confrères* in Italy. The streets, of course, were crowded with citizens, who had turned out to offer their greetings to the delegates, and all along the line of march there was a continuous interchange of salutations. Before they had gone far the Bologna students, who acted as masters of the ceremony, and from the carriages introduced the various delegates to the populace, became as hoarse as crows, but still they persevered, and every moment the raillery and excitement increased.

I regret that time will not allow me to follow all the doings of the students in Bologna at this festive time. I must content myself by mentioning one or two of the leading events.

On Monday evening they took part, along with the citizens and military, in a great torch-light procession in honour of the King and Queen. This was managed in a very different manner from similar demonstrations in this country, where a blaze of light appears to be the chief object. In Bologna the torches consisted of long poles, on the summits of which were perched artistic devices. The outline of these was brought out by fairy lamps of different colours. The effect was very fine and the procession a great success.

On Tuesday evening the students held their great banquet, and here the offerings of the delegates—the wine, the ox, and the cheese—were discussed. Mr. Constable, the Edinburgh delegate, gives a very racy and graphic account of the proceedings. He tells us that the dinner (which, by the way, was given in the open air about four miles out of Bologna) went on in an orderly manner until two telegrams came—one from the Emperor of Germany and the other from the President of the French Republic. The excitement then became so intense that the table was forsaken, although

only three courses had been partaken of, and the whole party took to dancing, embracing, and handshaking.

On the following evening the students held what they called a "Festa umoristica." It commenced in the form of a procession through the streets. Those who took part in this were attired in mediæval costumes, and mounted on donkeys. The effect was ludicrous in the extreme, and provoked the most unrestrained mirth on all hands. In this manner they wended their way to the Montagnola, where a vast crowd awaited their performance. This consisted in a series of theatrical displays, joisting on donkey-back, and sports of various kinds. The representations which they gave depicted episodes in the history of the Bologna University. Galvani and his frog were not forgotten, and the frog was very cleverly represented by a student, who happened to be a son of the patriotic Count Saffi.

All honour to the students of Bologna, who did so much to ensure the success of the Festival. In many cases they had not an easy part to play. In Italy students enter keenly into politics, and a large proportion of the Bologna students are radical and anti-monarchical. Yet these students subordinated their own feelings and extended a most hearty and respectful welcome to the King and Queen; not a word was uttered even during the heat of excitement but what was courteous and loyal. With all their extravagances there was not a trace of rowdyism. And again, they showed tact in their dealings with the students from Germany and France. International jealousies are especially liable to be fanned into open flame in the young, and although every one knew in which direction the sympathy of the Italian students tended, this was never shown openly, so that good feeling and good fellowship was maintained on all hands.

My sketch has been in many respects a very imperfect one. It could not be otherwise within the limits of a single lecture. In finishing, let us wish all success and prosperity to our ALMA MATER STUDIORUM. She has reached a ripe old age. May she always remain as green and as fresh as at present.

ART. XXIII.—*Anæsthetics*. By GEORGE M. FOY, F.R.C.S.I.;
Surgeon to the Whitworth Hospital, Drumcondra.

(Continued from p. 381).

THE *renaissance* of science that marked the termination of the eighteenth century happily synchronised with the humeral pathology of the period, and in the chemical investigation of the tissues pathologists sought for the cause of all diseases. Amongst the most distinguished, both for originality and eccentricity in that age, was Thomas Beddoes, the son of a tanner in the village of Shiffnal, in Shropshire, where he was born in April, 1760. At the very commencement of his career the discoveries of Black and Priestley were exciting the admiration of scientists, and young Beddoes, who in 1776 had, through the kindness of his grandfather, entered at Pembroke College, Oxford, fully participated in the interest they excited.

In 1784 he translated the "*Opuscles de Physique Animale et Végétale*" of the Abbé Spallanzani. He now definitely decided on medicine, and he went to Edinburgh, where he attended Cullen's lectures, and was selected by him to annotate his translation of Bergman's "*Essays on Elective Affinity*." After graduating as M.D. in 1786, Beddoes visited Lavoisier, and on his return from the Continent he was appointed Reader in Chemistry to the University of Oxford, but his sojourn in France had made him a convert to Republicanism, and the Oxford dons took fright, so Beddoes was dismissed the appointment, and a less brilliant chemist, but a more conservative politician, replaced him in 1792.

Believing that Dr. Mayow was not credited for his discoveries, made during the preceding century, Beddoes republished some of his works in 1790, under the title of "*Chemical Experiments and Opinions*."

On leaving Oxford he retired to Shropshire, where he commenced his investigations into the theory of the humoral pathology, which fascinated him so much that his whole after-life was devoted to the study. Pamphlet followed pamphlet, and his energy seemed exhaustless; he wrote a moral story—the "*History of Isaac Jenkins*"—to try and check drunkenness, and his pamphlets ranged from the celebrated one, "*Encouragement of Quackery by the Clergy*," to the "*Rights of Man*." He held that all diseases were due to the excess or deficiency of some elementary constituent of the body, and his practice was in conformity with these

views. He attributed scurvy to a deficiency of oxygen, and phthisis to an excess of that elementary body.

He now determined to put his theory to the test of practice, and he decided on establishing a pneumatic hospital, where patients would be submitted to the inhalation of such gases as would, in his opinion, remedy the deficiency or excess of the elements which caused their illness. His first decision was in favour of London as a proper site for the institution, but finally he decided on Bristol, and on the establishment of his hospital in 1798 he commenced the publication of a journal entitled *Contributions to Medical and Physical Knowledge from the West of England*. His labours as editor, pamphleteer, and physician, so occupied his time that an assistant to superintend his laboratory became a necessity. At the suggestion of his friend, Mr. Gregory Watt, he engaged a young man, Mr. Humphrey Davy, as his assistant. In the following year Mr. Davy published his first paper, "Experimental Essays on Heat, Light, and the Combinations of Light," in Beddoes' journal, and in the same year appeared Beddoes' article, "Consumption."

It was in this Bristol hospital that Beddoes discovered the exhilarating effects of nitrous oxide, and it was in it that Mr. Davy discovered the anæsthetic properties of the gas.

The work in which Beddoes' peculiar ideas are enunciated most plainly is "Considerations on the Medicinal Use and on the Production of Factitious Airs." By Thomas Beddoes, M.D., and James Watt, Engineer. Parts I., II., III. 8vo. Johnson: London, 1794-5. In the same year appeared "A Short Account of the Nature and Properties of Different Kinds of Airs, so far as relates to their Medicinal Use; intended as an Introduction to the Pneumatic Method of treating Diseases, with Miscellaneous Observations on Certain Remedies used in Consumptions." By Richard Pearson, M.D., Physician to the General Hospital near Birmingham, and Member of the Royal College of Physicians, London. 8vo. Baldwin: London, 1795.

Vapours were used for every form of disease; thus, we find Dr. John Ewart, "one of the Physicians of the Bath City Infirmary and Dispensary," publishes in 1794 "A History of Two Cases of Ulcerated Cancer of the Mamma; one of which has been cured, the other much relieved, by a New Method of applying Carbonic Acid Air." The new methods were not, however, allowed to pass unchallenged. A Dr. Robert Harrington took exception to the new views, and in 1793 he published a volume of "Chemical Essays;

being a Continuation of my Reflections on Fixed Fire, with Observations and Strictures upon Drs. Priestley's, Fordyce's, Pearson's, and Beddoes' late Papers in the 'Philosophical Transactions.'

Amongst the many remedies tried by Beddoes was sulphuric ether, and he recommended its inhalation to relieve pain. In the experiments carried on in Bristol, Pearson took a keen interest, and he began to extensively use the vapour of sulphuric ether in consumptive cases. On the 1st of July, 1796, he communicated, in a letter to Dr. Simmons, F.R.S., of London, "Some Account of the Effects of the Vapour of Vitriolic Ether in Cases of Phthisis Pulmonalis." This letter was afterwards published, as was the custom, in a volume of transactions entitled "Medical Facts and Observations," in the seventh volume of which, published in 1797, the letter appears; and as the fact is often referred to, and the letter, which is a short one, is so inaccurately quoted, I give a copy, that the profession may see what position ether occupied as a therapeutic immediately before its introduction as an anæsthetic agent in surgery:—

"Having for the last two years prescribed the vapour of vitriolic ether to patients labouring under phthisis pulmonalis, and having, both in hospital and private practice, experienced the best effects from its use in this frequent and formidable disease, I am preparing to lay before the public a report of the cases in which it has been given, accompanied with remarks on some other remedies that may be employed with advantage in the cure of consumptions. Being desirous in the recommendation of a new medicine to have my own evidence supported by the concurrent testimony of other practitioners, I take the liberty of calling your attention to this subject, and of submitting to your notice my method of using this application, which is simply this—I direct the patient to pour one or two teaspoonfuls of pure vitriolic ether (or of vitriolic ether impregnated with cicuta, in the manner hereafter described) into a tea-cup or wine-glass, and afterwards to hold the same up to the mouth, and draw in the vapour that arises from it with the breath, until all the ether is evaporated. This is repeated three, four, or five times in the course of a day, for a month or six weeks, more or less, according to circumstances.*

"* The loss of a part of the vapour, which is unavoidable in this mode of applying it, may be prevented, as a medical friend has suggested, by setting the tea-cup containing the ether in a small basin, and inverting a funnel over it. By applying the mouth to the tube of the funnel, and making an inspiration, the patient draws in all the vapour along with the atmospheric air, which enters at the bottom of the funnel. In winter the evaporation may be promoted by setting the tea-cup

"The first effects of this application are an agreeable sensation of coolness in the chest, an abatement of the dyspnoea and cough, and, after ten minutes or a quarter of an hour, easier expectoration. The *ultimate effects* (provided other proper measures be not neglected, for this is not to supersede the use of other medicines, but to be employed in conjunction with them) are a removal of the local inflammation, a cleansing and healing of the ulcerated lungs, and a suppression of the hectic fever. To assert that all these beneficial consequences will flow from its application in every species and degree of phthisis pulmonalis would be adopting the language of quacks, and insulting the understanding of every one experienced in the profession; but to say that some of these good effects are likely to result from its use in most instances, and most of them in a great number of instances, is only asserting what an experience of two years in a situation, where the opportunities of making trial of it have been very frequent, has fully confirmed.

"The salutary operation of ether applied to the lungs in the form of vapour, I have found to be greatly promoted by several volatile substances that are soluble in it; but by none more so than by cicuta. By macerating a sufficient quantity of the dried leaves of this plant in ether for the space of three or four days, or, at most, a week, and occasionally shaking them together, a very saturated tincture is obtained, which may be inhaled in the same manner, and in the same doses, as the pure ether. My proportions are a scruple or half a drachm of the powdered leaves to every ounce of ether. The narcotic particles of the cicuta, conveyed in this manner along with the ether-vapour to the diseased lungs, act as a topical application, with the best effect; hence, ether thus impregnated succeeds in most instances better than when it is employed alone. The only unpleasant circumstance attending the inhalation of the ethereal tincture of cicuta is a slight degree of sickness and giddiness, which, however, soon go off.

"It cannot be expected that I should here point out every symptom, or set of symptoms, which indicate or forbid the use of in hot water, in which case the funnel is to be inverted, *not* into the basin containing the water, but over both the tea-cup and basin, so as to rest immediately upon a table, tray, or plate, having a bit of doubled paper or a quill put under it, to allow the external air to enter more freely.

"Children, and even infants, may be made to inhale this vapour by wetting a handkerchief with ether and holding it near the nose and mouth. It must be confessed that this is attended with great waste; but in urgent cases of whooping-cough and croup, in which it promises to be of use, this consideration can have little weight."

this application. I shall only remark, that it appears to be best suited to the florid, or what is commonly termed the scrophulous consumption. Where the pulmonic affection is complicated with mesenteric obstruction, or diseases of the other viscera, or a dropsical condition, it affords but transitory relief; and in the very last stage of the disorder the proper time for using it is past.

"Should you be induced, sir, by this address to make trial of the vapour of vitriolic ether impregnated with cicuta in phthisical cases, I shall be glad to be favoured with your remarks and observations upon it, whether in its favour or not.

"N.B.—In catarrhs the ether-vapour without the cicuta succeeds very well. In these cases it is seldom necessary to continue the inhalation more than three or four days, or a week at farthest."

Bristol was the principal port for American trade, and we need not be surprised to find inhalation of ether-vapour recommended by Dr. Warren, of Boston, for phthisis in 1805—about which time Dr. Woolcombe, of Plymouth, was using it. In 1815 Nysten recommended the inhalation of ether vapour.* Faraday, who acknowledged the authorship of the article on ether-vapour in the *Quarterly Journal of Science*, thus wrote in 1818:—"A convenient mode of ascertaining the effects of ether is obtained by introducing a tube into the upper part of a bottle containing ether, and breathing through it. A stimulating effect is at first perceived at the epiglottis, but soon becomes very much diminished; a sensation of fulness is then generally felt in the head, and a succession of effects similar to those produced by nitrous oxide.

"By lowering the tube into the bottle more of the ether is inhaled at each inspiration, the effect takes place more rapidly, and the sensations are more perfect in their resemblance to those of the gas. In trying the effects of the ethereal vapour on persons who are peculiarly affected by nitrous oxide, the similarity of sensations was very unexpectedly found to have taken place. One person, who always feels a depression of spirits on inhaling the gas, had sensations of a similar kind produced by inhaling the vapour."

The necessity for due care in the administration of the ether-vapour did not escape the attention of Faraday. He writes as follows:—"It is necessary to use caution in making experiments of this kind (ether inhalation). By imprudent inspiration of ether a gentleman was thrown into a very lethargic state, which continued, with occasional

* Dict. des Sciences Méd. Vol. XIII.

periods of intermission, for more than thirty hours, and great depression of spirits for many days; the pulse was so much lowered that considerable fears were entertained of his life."

Physicians, after ether-vapour had attained so much repute, commenced an indiscriminate use of medicated inhalations.

In 1829 Dr. James Murray published at Longmans his "*Practical Observations on the Inhalation of Iodine and various Vapours in Consumption, Catarrh, Croup, Asthma, and other Diseases.*" Horatio Potter, the following year, published a volume on the "*Inhalation of Diluted Chlorine in the Early Stages of Pulmonary Consumption.*"

Dr. Humphrey's book on "*Medicated Vapours*" appeared in 1831, and during the same year Sir Charles Scudamore published his book of "*Cases illustrative of the Efficacy of Various Medicines administered by Inhalation in Pulmonary Consumption; in certain Morbid States of the Trachea and Bronchial Tubes, attended with Distressing Cough; and in Asthma.*"

The profession and the public had become quite familiarised with inhalations, and we are prone to give the experimenters with ether and chloroform an undeserved credit for courage; they were simply doing what numerous others were doing—testing the properties of the medicine by inhalation, they were unconscious of danger. Dr. J. D. Mitchell writes*—"Some years ago a practice obtained among the lads of Philadelphia, of inhaling the vapour of sulphuric ether by way of sport. A small quantity, placed in a bladder, was almost instantly converted into vapour by the application of hot water. By means of a tube and stop-cock, the gas could be easily inhaled. In some instances the experiment excited mere playfulness and sprightly movement, but in several cases delirium and even phrenitis was induced, which ended fatally."

A similar practice was customary in Anderson, South Carolina, and in one of their mischievous moods the boys got hold of a negro lad, who, being held down, was forcibly put under the effect of the ether-vapour; complete anæsthesia resulted, and the boys were terribly frightened. One of them, Wiehite, long afterwards told the story to the gentleman with whom he was serving his time—Dr. Long, of Jefferson, Georgia—and Long determined to try the effect of ether-vapour as an anæsthetic. An opportunity soon afterwards offered, and Long, in March, 1842, etherised a patient from whom he painlessly removed a tumour.

* Mitchell's Chemistry, p. 172. Beck's Jurisprudence, p. 944. Albany. 1835.

From deficient inter-State communication in 1842, Dr. Long's operation remained unknown until the 1847 controversies of Wells, Morton, and others, caused the past records to be examined.

Two deaths from the inhalation of the vapour of nitrous ether in 1830 excited considerable attention. One of them was reported by a gentleman in April, 1830, to the Royal Institution, London; and an account of the other was copied from the report of the coroner's inquest, which appeared in a local paper, into the second volume of the *Midland Medical and Surgical Reporter*, and summarised on page 452 of the thirty-fifth volume of the *Edinburgh Medical and Surgical Journal*. They are referred to both by Christison* and by Beck, and as they are cases of considerable interest I give them as reported:—"A carboy of nitric ether, which was kept in the bedroom of a servant, burst during the night; the vapour filled the room, there was no fireplace, and the door was shut. In the morning the occupant of the room was found dead in bed."

The second case is that of "a female, in the service of Mr. Thomas, druggist, at Hay, Breconshire, went to bed in perfect health, but did not rise the next morning at her usual hour. On going to call her the door was found fastened, and on breaking it open she was seen dead, lying on the right side, with arms folded across the breast, as in profound sleep, and the features calm.

"The body was opened in the presence of three surgeons. The coats of the stomach were a little inflamed, and it contained a little fluid. The intestines were turgid, and the lungs gorged; the uterus was found impregnated, and bearing a three months' male fœtus. The dissection proceeded no further, and the suspicion that had been entertained that poison had been swallowed was removed by the discovery that in the room was a broken jar, which had contained three gallons of nitric ether, and the ether spilled about the room. The apartment being small, and the atmosphere strongly impregnated with this vapour, the medical witnesses were of opinion that the effluvia caused her death, and such was the verdict of the coroner's jury."

The editor of the *Midland Medical and Surgical Reporter* states that he is acquainted with an instance where effects of the same description, though not absolutely fatal, were produced by the inhalation of an atmosphere loaded with the vapour of sulphuric ether. The individual—a young man—fell into an insensible state,

* Christison on Poisons. 2nd Edition. Edinburgh: 1832. Beck's Jurisprudence. Albany: 1835.

remained apoplectic for some hours, and would undoubtedly have perished had he not been removed in time from the noxious atmosphere. Dr. Christison, now Sir Robert, quotes a somewhat similar instance—that of a gentleman who, in consequence of inhaling sulphuric ether too long, was attacked with an intermitting lethargy for thirty-six hours, depression of spirits, and lowness of pulse.

The editor of the *Edinburgh Medical and Surgical Journal*, commenting on these cases, says:—"There can be no question, then, that the inhalation of air much loaded with these vapours will prove highly dangerous. . . . The woman seems to have died, as in cases of poisoning from carbonic acid, from slow obstruction of the breathing—from gradual asphyxia."

Thus, in 1831 we see that the profession knew of the power of ether-vapour, and how to combat its injurious effects, but it was not until the 30th of September, 1846, that Dr. Jackson produced unconsciousness in himself for eight minutes by the clock, with the vapour of sulphuric ether. It seems hard to believe that such a distinguished chemist as Jackson was could have been ignorant of Pearson's, Beddoes', and Faraday's experiments with sulphuric ether-vapour, or with the cases recorded above, for they were fairly well reported by Beck in his "Jurisprudence," which was published in Albany, New York State, in 1835; and that he was familiar with Sir Humphrey Davy's experiments with nitrous oxide gas, for he prepared the anæsthetic for Wells, Morton's partner.

Be that as it may, Jackson suggested to Morton that ether was suitable as an anæsthetic for teeth extraction, as he had experienced in himself the anæsthetic effects of its vapour, and Morton determined to test the value of the substance on the first opportunity. A suitable case occurred almost immediately after he had made his resolve, and the very same day, under the influence of ether-vapour, the aching tooth of Eben Frost was painlessly extracted. The astonishing and epoch-making fact was quickly made known throughout Boston, and on the 16th of October, 1846. Morton, at the request of the medical staff, gave ether-vapour to a patient in the Massachusetts General Hospital, from whom Mr. J. C. Warren removed a vascular tumour of the neck; and on the 6th of November of the same year Mr. Hayward amputated painlessly the leg of an etherised patient.

American surgeons lost no time in acquainting their European brethren of the great discovery. Drs. Bigelow and Ware wrote to Dr. Boot, of Gower-street, London, telling him of the pain-

preventing powers of ether-vapour ; and on the 19th of December, 1846, Mr. Robertson, a dentist, at the request of Dr. Boot, removed some teeth from an anæsthetised patient. This is considered to be the first operation performed under ether-anæsthesia in England.

On the 20th of January, 1847, the following paragraph appeared in the *Medical Press*, and it tells how quickly the new remedy was adopted :—“ *The Etherisation for Surgical Operations.*—The innumerable reports of the successful application of this discovery seem already to leave no reasonable doubt as to its value or of its safety in a great majority of cases, and as yet no fatal or even alarming result, has followed its use. Hundreds of operations have been performed after the inhalation, and in at least a large proportion they have been performed without pain, and, what is nearly of equal importance, without cry or struggle. In some, it is of course to be admitted, the agent has not only not caused the necessary amount of insensibility, but, on the contrary, a state of excitement altogether forbidding any operation ; and in others, though very rarely, it has had little effect in any way except leaving behind that state of nervous system which follows the use of alcohol by persons who resist its influence. An attempt is being made to restrict the use of this agent by patent. We are convinced that this can never be effected except to secure the invention of some particular inhaler. We wish the discoverer may have every legitimate advantage to which he is entitled, but any attempt to monopolise medicinal remedies must be resisted.”

We could have no stronger proof of the shortness of memory on the part of the profession than the fact that the unconsciousness produced by the inhalation of sulphuric ether-vapour was spoken of as if it were a new discovery. And on the 16th of January, 1847, Mr. James Robinson, dentist, of 7 Gower-street, London, who performed the first operation in England on an etherised patient, published his method of inhalation in the *Medical Press*. The first operation performed on an anæsthetised patient in Ireland was done on the 1st of January, 1847. The patient—Mary Kane, aged eighteen years, a healthy country girl from the neighbourhood of Drogheda—had her arm amputated in the middle third for an injury received in her elbow-joint.

A short time prior to the operation Mr. Hutton had read Dr. Forbes' article in the *British and Foreign Medical Review*, on the new anæsthetic, ether, and brought the article under the notice of Dr. J. M'Donnell, of 4 Gardiner's-row, the father of Dr. Robert

M'Donnell, who performed the operation in the Richmond Surgical Hospital. The operator was assisted by Carmichael, Hutton, Adams, and Hamilton. The first attempt to produce anæsthesia failed, but the second succeeded admirably, and the patient afterwards declared she had felt no pain.

Before Dr. M'Donnell submitted his patient to the risk of anæsthesia, he submitted himself "five or six times" to the insensibility of ether-inhalation—a fact which redounds both to his credit as a gentleman and his caution as a surgeon.

The case was discussed at a meeting of the Surgical Society on the 9th of January, 1847, and it elicited some interesting observations. Mr. Hargrave mentioned "the case of a young girl of sixteen or eighteen, who came under his observation some years ago, and on whom ether had a very remarkable effect. After an illness of some length, she was seized with spasmodic attacks of a violent tetanic character, for which there was no assignable cause. . . . Happening on one occasion, at the approach of a fit, to observe some ether by her bedside, I placed a little of it in the palm of my hand, which she inhaled with the immediate effect of arresting the laryngeal spasm and the tetanic spasm. For a week or ten days she used this remedy with much benefit." Dr. Henry Kennedy drew attention to the similarity in effect of sulphuric ether-vapour and that of nitrous oxide gas, and gave it as his opinion that anæsthetics were unsuited in cases of cardiac and pulmonary diseases.

Ether quickly became universally used, and that in the most reckless manner. A committee, consisting of Drs. M'Donnell, Tufnell, and Bellingham, appointed by the Surgical Society of Ireland, declared it should be used with care in all cases, and was unsuited for cases of disease of the heart and pulmonary lesions; any person, however, was deemed competent to administer it, and there is no telling how much damage it might have done if it had not been displaced by chloroform.

The great success of the drug caused Jackson and Morton to attempt to secure a patent for it, and this called forth Wells' protest, in support of which he put forward his claim to be considered the discoverer.

Mr. Wells' pamphlet ("A History of the Discovery of the Application of Nitrous Oxide Gas, Ether, and other Vapours to Surgical Operations," 12mo, pp. 25) was issued on the 30th of March, 1847. Wells bases his claim on the fact that he extracted a tooth from a patient who was under the anæsthesia of nitrous

oxide gas before Dr. J. C. Warren's surgery class in the Boston School of Medicine as early as 1844, and that Morton was his pupil.

Morton's claims were defended against all comers by Mr. Edward Warren in a pamphlet entitled, "Some Account of the Lethean; or, Who is the Discoverer?" By E. Warren. With a Supplement. 8vo, pp. 88. Boston, 1847. It appeared in May, 1847, and he asserts that an obstinate patient of Morton's refused to have a tooth extracted unless it could be done painlessly, and that he in conversation with Jackson reminded him of the inhalation of ether-vapour by the students at college, and asked did he think such a remedy would suit their purpose. Jackson approved of the suggestion, and recommended Burnett's ether as the best for the experiment.

To me it appears that Jackson knew of the effects produced with the agent by the English experimenters, and recommended ether-vapour, after first having tried it himself, to Morton. At all events, Morton is not deserving of much sympathy. His first attempt was to procure a patent, giving Jackson ten per cent. to keep quiet—a fact which does not give much support to his claim to be considered the discoverer.

Discussion on the subject of ether was not confined to America. Dr. Bigelow, of Boston, attacked Sir James Young Simpson for taking to himself undue credit for the introduction of anæsthesia into surgery. Simpson, however, fully established his claim to the merit of having introduced ether-anæsthesia into the practice of midwifery—his first case occurred on the 19th of January, 1847, and was shortly afterwards reported in the medical journals.

No person could have thought that ether was to be so quickly and completely displaced. But, in truth, the profession had got a craze for testing all manner of vapours, and the smell of ether was both unpleasant and suffocative, and many untoward effects—delirium, bronchitis, and even death—came to be justly credited to the indiscriminate use of the agent.

The observations of the Editor of *Ranking*, made in 1847, are so appropriate that I think them worth being recalled—"The real danger to which it (ether) is exposed arises from the precipitate encomiums of its friends, and the reckless manner in which it appears to be made use of, with reference to and by persons utterly incapable of judging of the normal or diseased physical peculiarities of the patient."

One of the first recorded deaths from ether-vapour was that of Thomas Herbert, who died about forty-eight hours after a lithotomy

operation, performed in the Colchester Hospital, in February, 1847, by Mr. Roger Nunn, and reported by him in the *Medical Gazette* of the 5th of March following.

On the 16th of February, 1847, M. Jobert, of the St. Louis' Hospital, Paris, brought before the Academy of Medicine an account of two cases of death from ether which had occurred in his practice, and on the 12th of March of the same year the Editor of the *Medical Gazette* mentioned that he was already "aware of six or seven deaths" from ether-vapour, and refers to the frequency of "great excitement of the nervous system, sometimes approaching to apoplexy, an asthmatic condition of the respiratory organs, spitting of blood, syncope, as amongst the results of ether inhalation."

These accidents, of course, led to other methods being adopted, and M. V. Dupuy, in the *Gazette Medicale* of the 12th of April, 1847, suggested the administration of the ether-vapour *per anum*, stating that in some experiments on dogs and rabbits he had found that method of administration to produce all the good effects without any of the unpleasantness of the oral method.

Dr. J. T. Johnson had the same idea as M. Dupuy; he put the method to the test, and reported very unfavourably of it in the *Madras Spectator*.

The *Lancet* of the 10th of July gives the following case from Dr. Johnson's reprint:—"A. B., European, a strong, healthy-looking man, having hydrocele on the left side of about one year's standing, presented himself at my house for operation on Thursday, the 1st of April, and wished to be put under the influence of ether previously. Having, on the day previous, as recommended by Assistant-Surgeon Crawford, used the vapour of ether as an enema by way of experiment, on three dogs, with the effect of producing symptoms of drunkenness, attended by vomiting and apparent diminution of sensibility in each case, I considered the present a fair opportunity of trying it in this way on the human subject. I put an ounce of ether into a common bladder with an ivory pipe, placed the bladder in hot water, and forced the vapour into the rectum as it evaporated. The patient immediately complained of much uneasiness, said he felt as if I were throwing boiling lead into him, was griped, and tasted the ether in his breath. His breath also smelt strongly of it. In a few minutes he felt so much distended, was griped, and felt altogether so uncomfortable, that he made me discontinue the injection, saying that he would rather suffer the pain of the operation than go on with it."

Antidotes for ether-vapour came to find a place in the surgeon's armentarium, and on the 29th March, 1847, Mr. James Robinson recommended the use of oxygen gas, which Dr. (now Sir William) Gull declared to be useless. Artificial respiration and small bleedings were adopted, and every hospital found it necessary to arm itself with antidotes against an agent which a few months previously was declared to be perfectly reliable as an anæsthetic, and wholly free from danger.

(To be continued.)

ART. XXIV.—*Accidental Rashes in Typhoid Fever.** BY JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the King and Queen's College of Physicians; Physician to the Meath Hospital; Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin; ex-Scholar and Diplomate in State Medicine of Trinity College, Dublin.

IN the remarks which follow, it is not my intention to allude to the essential rose-spot rash of typhoid fever; or to the more common epiphenomena of the disease connected with the skin, such as *taches bleuâtres*, purpura-spots, vibices, and sudamina or sweat-vesicles;^b or, lastly, to the co-existence with typhoid fever of other specific diseases showing characteristic eruptions, such as scarlatina, measles, variola, and—above all—typhus. I desire rather to draw attention to certain other accidental or adventitious appearances of the skin, which are of somewhat rare occurrence and, from a diagnostic point of view, of considerable importance. These are—(1) Simple Hyperæmia; (2) Miliary Eruptions; (3) Erythematous Rashes; and (4) Urticaria.

CASE I.—*Simple Hyperæmia or Erythema Fugax* (Radcliffe Crocker).—So recently as November 9, 1888, I visited at 9 30 a.m. a gentleman, aged twenty-two, who had been for the previous five weeks passing through a mild attack of typhoid fever, in which the temperature had probably never exceeded 104° F. I say "probably" because the record of evening temperatures is incomplete. A marked symptom in the case

* Read before the Section of Medicine of the Royal Academy of Medicine in Ireland on Friday, November 16, 1888.

^b "La miliaire pellucide, improprement appelée *sudamina*, qui apparaît ordinairement du onzième au vingtième jour, quelquefois plus tard, est constituée par de petites bulles, arrondies ou oblongues, ressemblant alors à des larmes, remplies d'un liquide transparent." Trousseau. Clinique Médicale de l'Hôtel Dieu. 1865. Tome I., p. 234.

was repeated and severe epistaxis. Rose-spots had appeared in successive crops, and there was decided enlargement of the spleen. The bowels had been regular throughout—no interference with their action being at any time required. A week of apyrexia having passed by, the convalescent was allowed a small portion of the breast of a chicken on Wednesday, November 7. Next morning the tongue was furred; the pulse rose to 96 and the temperature to 99·4°. In the forenoon, the patient felt chilly, and on attempting to get up about 3 p.m., he was seized with a violent rigor. He said he did not *feel* cold, but nevertheless he *shook* all over. I saw him at 6 p.m., and found him with a pulse of 136 and a temperature of 105·5°—a perspiration was just setting in. Next morning the pulse had fallen to 116 and the temperature to 99·8°. A profuse diaphoresis had occurred in the night. The skin was everywhere suffused—the rosy blush being deepest near the armpits and the flexure aspects of the joints. On drawing the finger across the surface no so-called *tache scarlatinale* could be seen. There were a few sudamina. The throat was not sore, although the mucous membrane of the fauces was injected. Quiet sleep was enjoyed during the day, and by 6 30 p.m. the pulse had fallen to 108, and the temperature to 98·8°, with a moderate perspiration. The bowels acted naturally and freely about 3 p.m. On Monday, November 12, at 10 a.m. the patient was apparently convalescent—tongue clean, pulse 68, and temperature 97·2°; abdomen soft, bowels regular.

There can be no question that this was a case of pyrexia and simple hyperæmia, or intense determination to the skin, of an eliminative kind, resulting perhaps from the inhibitory effect of an intestinal irritation on the vaso-motor system.

CASE II.—*Miliary Eruptions.*—On Thursday, September 27, 1888, Mr. George M. Foy, F.R.C.S.I., asked me to see with him in consultation a gentleman, twenty-four years of age, residing at Rathmines, who was then about ten days ill of typhoid fever. The attack had commenced with severe headache and constipation. There was some splenic enlargement, and a few rose-spots were scattered over the arms and buttocks. The pulse (at 1 p.m.) was 104, respirations 26, and temperature 102·5°. It was impossible to ascertain whether rose-spots were or were not present on the trunk, as it was everywhere covered with a dense miliary rash, each tiny vesicle being filled with a lactescent fluid and surrounded with a zone of hyperæmia, resembling a typhus macula or a measles papule. At first sight, on looking at the back, one was inclined to believe that the case was a severe typhus fever, with a copious and almost petechial rash. Two facts belied any such view. First, this crop of miliary vesicles had appeared within the previous twenty-four hours;

and secondly, the rash was strictly limited to the trunk. I have occasionally seen a precisely similar appearance in acute rheumatic arthritis, or rheumatic fever.

CASE III.—*Erythema Simplex, vel Scarlatinale*.—On Sunday, October 7, 1888, I was asked by Dr. J. F. Pollock, F.K.Q.C.P., to see with him a young gentleman, aged nineteen, at Blackrock, Co. Dublin, at that time on the twentieth day of typhoid fever. The reason for calling me in was the appearance some hours previously of a wide-spread rash, which exactly resembled that of scarlatina. It consisted of minute punctiform bright-red papules, with a general or confluent efflorescence on the trunk and near the large joints, particularly on their flexure aspect. The question I was called upon to solve was whether the rash was really that of scarlatina or not. It was of the gravest importance that no mistake should be made, as the patient happened to be on a visit in a house full of young children, none of whom had, I believe, suffered from scarlatina. Early in September the gentleman complained of diarrhoea, for which he was treated by Dr. Pollock, and apparently recovered in a few days. He went to the country, but soon began to ail. On Monday, September 24, he again consulted Dr. Pollock, who found his temperature high and sent him to bed. It was soon evident that he was about a week ill of typhoid fever. The disease ran a tolerably normal course until the 6th of October (19th day), when an alarming "dip" in the temperature occurred. At 10 30 a.m. a minimum of 96° F. was recorded. In the afternoon a recovery took place, and at night a reading of 100·9° was noted. At this time a scarlatinal rash was rapidly spreading over the chest and back, and next day it was distributed as I have already described. The tongue was stripped of its epithelium, glazed, with enlarged papillæ—a condition not unusual towards the close of the third week of typhoid fever. There was no undue redness, swelling, or tenderness of the fauces; the cervical glands were not swollen. Was scarlatina present? I answered unhesitatingly "No," and for these reasons. There was no history of exposure to infection within the previous week. There had been no rigor, or nausea, or vomiting, or diarrhoea on the preceding day. There was no sore throat or glandular swelling. The pulse did not rise above 108. The temperature ranges were not in any way characteristic of scarlatina. The condition of the tongue was quite as likely to occur in typhoid fever as in the even more dreaded disease which was suspected to be present. Lastly, rashes of the kind are not very uncommon in acute fevers, although indeed it is in the earlier stages that such epiphenomena are usually seen.

Dr. Pollock has very kindly given me a copy of the clinical chart in his patient's case, and has informed me that considerable desquam-

ation followed the disappearance of the rash, which, however, he concurred with me in regarding as not that of scarlatina. The clinical chart is appended, and affords a good example of typhoid fever of medium severity, running its course in about five weeks. Albuminuria was not observed.

CASE IV.—*Urticaria* (Germ. *Nesselsucht*).—I am indebted to Dr. Walter G. Smith for a brief note of a case of typhoid fever in which this complication occurred. He was recently called to the country in consultation to see a man, aged forty-five years, who was at the time of his visit in the fifth week of the fever. The immediate reason for Dr. Smith's visit was a sudden and extensive outbreak of urticaria or nettle-rash. The wheals were very distinct, and there was troublesome itching. In a day or two the eruption faded and the irritation of the skin subsided.

Now, of all these adventitious appearances connected with the skin in typhoid fever, the erythematous rashes are the most important, because they may so closely simulate scarlatina. The miliary eruption, if coupled with the rheumatoid pains which are not infrequently present in typhoid, might cause a wrong diagnosis of rheumatic fever to be made; while nettle-rash, if associated with catarrh, might be mistaken for measles. But, serious as we should consider these errors of diagnosis to be, a much more disastrous mistake would be the confounding of erythema with scarlatina, or, conversely, the overlooking of scarlatina in the belief that the rash was simply erythema. The third case I have detailed in this paper is an instance in point. In giving my opinion, I was fully aware of the grave responsibility incurred, and of the issues which were at stake; and yet with confidence I decided against the diagnosis of scarlatina, being convinced that the presence of a scarlatiniform rash was not by itself sufficient to warrant or to justify a diagnosis of scarlatina.

What, then, was the eruption? There can be little doubt that it was the *Erythema punctatum* of Dr. McCall Anderson,^a the *Erythema scarlatiniforme* of Hardy, the *Roséole scarlatiniforme* of Bazin, the *Symptomatic Erythema* of Dr. James Nevins Hyde,^b the *Erythema scarlatiniforme* of Dr. H. Radcliffe Crocker,^c the *Diffuse*

^a A Treatise on Diseases of the Skin. London: Charles Griffin & Co. 1887. Page 89.

^b A Practical Treatise on Diseases of the Skin. Second Edition. London: J. & A. Churchill. 1888. Page 154.

^c Diseases of the Skin. London: H. K. Lewis. 1888. Page 58.

Erythema of Liebermeister,^a the *Scarlet Rash* of Charles Murchison.^b

Writing of this rash, Dr. Hyde observes :—"Several of the severer constitutional maladies betray their morbid influence upon the central nervous system by a speedy efflorescence of this character. A lurid erythema of the axillary or inguinal region may precede by several days the eruption of confluent variola. Cholera, cerebro-spinal meningitis, enteric and other fevers are thus at times accompanied, preceded, or followed by rashes. A study of these is of the utmost importance to the diagnostician. Children who are really susceptible to the disease are often supposed to possess an immunity from scarlatina, as the symptomatic erythema they previously displayed was misconstrued."

Liebermeister says :—"In some cases [of typhoid fever] that I have seen, a *diffuse erythema* has appeared, in the course of the first week, most commonly on the neck and forearm, but sometimes on other parts. Occasionally this has been so diffuse that it caused doubt for a little while, especially when the patient had sore throat, whether one might not be dealing with a case of scarlet fever. This eruption afterwards disappeared, and the disease ran its ordinary course. So far as I can remember, these were all severe cases."

To very much the same effect Murchison writes :—"In many cases of enteric fever the appearance of the lenticular spots is preceded, for two or three days, by a delicate scarlet rash all over the body, disappearing on pressure. This is not peculiar to enteric fever, but occurs in other forms of pyrexia. It is best seen in patients with white delicate skins. Jenner mentions an instance where this rash co-existed with slight sore throat, and the disease was mistaken for scarlatina. Several similar cases have come under my own notice. Occasionally this hyperæmia persists throughout the fever, and in the advanced stages a red or purplish blush of the skin is sometimes observed on the dependent parts of the body."

But, not to multiply quotations, we find the fullest account of this puzzling rash in Radcliffe Crocker's work on "*Diseases of the Skin*," in the following words :—"Under certain circumstances a widespread or general eruption comes out, sometimes quite suddenly, punctiform, erythematous, and exactly resembling scarlet

^a Von Ziemssen's *Cyclopædia of the Practice of Medicine*. London : Sampson Low, Marston, Low, and Searle. 1875. Vol. I., page 183.

^b *The Continued Fevers of Great Britain*. Third Edition. London : Longmans Green & Co. 1884. Page 516.

fever in most of its features; but it does not begin in any special position, and moreover it is common to find the eruption sharply defined in places, especially beside the nose, leaving a narrow tract of, by contrast, preternaturally white skin between the two hyperæmic areas. This is never the case in scarlatina. Like the other erythematous eruptions, the red skin is whitened for a moment when the finger is drawn across it. There is some constitutional disturbance, usually slight, the temperature being 100° or 101° , but soon subsiding, and the fauces somewhat red; if the general symptoms are severe, they are due to the disease in whose course the eruption appears. The subsidence of the rash, which occurs in from two to six days, is usually, but not always, followed by more or less copious desquamation, according to the intensity of the erythema."

On April 13, 1883, Dr. Thomas Whipham read a paper before the Clinical Society of London, entitled "Two Cases of Enteric Fever accompanied by an Erythematous Eruption resembling that of Scarlatina."^a In his paper Dr. Whipham refers to an elaborate communication, by Dr. John Harley, on the question of the connection between scarlatina and enteric fever,^b and concludes with the following paragraph: "It seems, therefore, difficult to avoid the conclusion that the last three of Dr. Harley's cases, together with the two which form the subject of this communication, are in reality instances of enteric fever preceded by an erythema, which is not uncommon in small-pox, and which is frequently observed in pyæmia." The most important point about Dr. Whipham's two cases is that they both proved fatal, and that an opportunity was afforded in each instance of verifying the diagnosis of typhoid fever by a *post-mortem* examination.

According to an abstract from the pen of Dr. Robert Saundby in the *London Medical Record* of December 15, 1878, MM. Raymond and Nélaton reported in *Le Progrès Médical* of October 19 of the same year, the histories of two cases of typhoid fever in the wards of M. Moutard-Martin, at the Hôpital Beaujon, which were accompanied by a very singular eruption, both in its aspect, its course, and the time of its appearance. MM. Raymond and Nélaton remark that analogous rashes have been recorded, in particular by Griesinger, who says: "In rare cases we observe, at the same time as the roseola [*i.e.*, the rose-spot eruption], a rash *like* urti-

^a Transactions of the Clinical Society of London. Vol. XVI., page 150.

^b Medico-Chirurgical Transactions. Vol. LV., page 103.

caria." To their two cases MM. Raymond and Nélaton add a third noticed by M. Moutard-Martin, in which a rash, resembling that caused sometimes by copaiba, and which he called first "febrile urticaria," but afterwards "papular erythema," supervened on the sixth day of typhoid fever. The rash gradually lost its bright colour and slowly disappeared. The hands and feet desquamated in large patches; the rest of the body showed only branny desquamation. As to the cases observed by MM. Raymond and Nélaton, they believe that they were not scarlatina, for the following reasons:—1. The form of the eruption, and its predominance in parts unusual in that disease. 2. The absence of prodromata, and of the concomitant scarlatinal symptoms, angina, state of tongue, &c. 3. The course followed by the desquamation. On the hands there were no large flakes. One of the patients showed the rash on the fifteenth day of his fever; the other showed it on the eleventh or twelfth day. Both cases were very severe, and were of an ataxo-adynamic type.

In the Proceedings of the "Société Médicale des Hôpitaux de Paris" for 1873, M. Siredey reports a case in which "towards the fifteenth day of a typhoid fever a scarlatiniform erythema appeared, which, commencing in the right cheek, spread rapidly over the face and neck, and by the following day occupied the whole surface of the body. Almost immediately, in the groins, the axilla, and on the back, the epidermis was raised by a serous exudation." M. Guyot, consulted by M. Siredey, agreed with him in rejecting the notion of its being scarlatina; nevertheless, desquamation occurred in large flakes.

It is not easy to arrive at a satisfactory conclusion as to the ætiology of this accidental erythema in typhoid fever. Bearing in mind the fact that it most commonly occurs early in the disease—that is, when a determination of blood to the skin may be presumed to have followed the initial rigors of the fever—we may, with some show of reason, attribute the development of the exanthem to a inhibition of the vaso-motor centre—the correlative of the stimulation of that centre by which the precedent rigors are explained—causing relaxation and overfilling of the arterioles of the skin, the impure blood further producing a passing dermatitis in the form of an erythema.

When the rash happens in the second or third week, we should remember that we are approaching the sweating stage of typhoid fever, and that then there is again a determination of impure blood

to the skin. Or we may regard this later appearance of the rash as of septicæmic origin, agreeing in time with the period of "spiking temperature," which is itself so suggestive of a septicæmic tendency. As Dr. Radcliffe Crocker says :^a "It [erythema scarlatiniforme] is seen occasionally in septicæmic conditions, as after surgical operations, but not so frequently since antiseptic precautions have been generally adopted." And this may throw some light on M. Trélat's observations on "Scarlatina following Surgical Operations," which appeared in *Le Progrès Medical*, September 14, 1878,^b as well as on the supposed origin of scarlatina from the decomposition of slaughter-house refuse, which was suggested, many years ago, by Dr. Alfred Carpenter, of Croydon.^c

In the *British Medical Journal* for December 7, 1878, there is a very interesting note on "Septicæmic Eruptions." In 1868, M. Verneuil proved the existence of several different cutaneous eruptions as taking place during purulent infection. About the same time, Dr. Braidwood was giving special attention to the study of one of those peculiar forms of pyæmic eruptions which bear a very close resemblance to the erythema observed in scarlatina. M. Guéniot tried to prove, in accordance with the well-known fact that women who have been recently delivered are often subject to cutaneous eruptions, that scarlatiniform erythemata had been observed, the so-called puerperal *scarlatinoïde*. In addition to the above-mentioned two classes of eruptions, M. Claudien Aulnas adds a third, which has also been observed in the course of purulent internal diseases. I submit that here we have sufficient evidence of the septicæmic or pyæmic origin of erythema scarlatiniforme, whether in typhoid fever or in other zymotic diseases or blood-poisonings.

In the four cases detailed in this paper, there was no evidence to connect the skin-rashes with the administration of any drugs. The patient, who was the subject of Case I., had not been taking any medicine whatever for a week or ten days before the efflorescence appeared. In Case II., only some small doses of morphin had been given. In Case III., quinine in 2-grain doses, thrice daily, had been given at the beginning of the attack, but had been discontinued because the medicine seemed to disagree. I have not

^a *Loc. cit.* Page 58.

^b See Lond. Med. Record, Oct. 15, 1878. Page 417.

^c See the *Lancet* for January 28, 1871, page 110 ; and *Manual of Public Health for Ireland*, 1875, page 169.

heard that the patient whom Dr. W. G. Smith saw was at the time taking any medicine at all.

It is necessary to make this statement, remembering, with Dr. Radcliffe Crocker,* that "a precisely similar rash occurs after certain drugs, especially copaiba, quinine, belladonna, and salicylic acid, &c. In these cases the rash is probably due to irritation of the alimentary canal acting reflexly on the vaso-motor centre."

To sum up:—

1. Not infrequently, in the course of typhoid fever, an adventitious eruption occurs, either miliary, urticarious, or erythematous.

2. When this happens, a wrong diagnosis of typhus, measles, or scarlatina respectively may be made, if account is not taken of the absence of the other objective and subjective symptoms of these diseases.

3. The erythematous rash is the most puzzling of all; but the prodromata of scarlet fever are absent, nor is the typical course of that disease observed.

4. This erythema scarlatiniforme is most likely to show itself at the end of the first, or in the third, week of typhoid fever.

5. In the former case, it probably depends on a reactive inhibition of the vaso-motor system of nerves: in the latter, on septicæmia, or secondary blood-poisoning; or both these causes may be present together.

6. The cases in which this rash appears are often severe; but its development is important rather from a diagnostic than from a prognostic point of view.

7. Hence, no special line of treatment is required beyond that already employed for the safe conduct of the patient through the fever.

AMYLENE HYDRATE.

DR. JUMON (*La France Médicale*) recommends amylene hydrate in three-grammes doses as an hypnotic. Its action is stronger than that of paraldehyde, but less so than that of chloral. It first produces a period of excitement, which is quickly followed by sleep. He employs the drug in diseases of the alimentary, circulatory, and nervous systems, and quotes the good results obtained from its use by Dr. Gurther, of Königsberg, and Dr. Dietz, of Leipzig. Amylene hydrate is soluble in eight parts of water.

* *Loc. cit.* Page 58.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Nerve Prostration and other Functional Disorders of Daily Life.
By ROBSON ROOSE, M.D., F.C.S. London: H. K. Lewis.
1888. Pp. 668.

THE first title is somewhat misleading, as nerve prostration, or neurasthenia, occupies but a very small part of the volume, which is really a handbook of functional disorders—using the word functional in a broad sense as including all cases in which changes are either very transitory or not discernible by the present means of research.

After an introduction on Functional Disorders in General, the book is divided into four sections dealing with Functional Disorders of the Nervous System, of the Organs of Circulation, of the Organs of Respiration, and of the Organs of Digestion. These are again largely divided. The subjects treated in *extenso* in Section I. will give an idea of the scope of the work. They are—Neurasthenia, Spinal Irritation, Sleeplessness, Hysteria, Epilepsy, Chorea, Neuralgia, Articular Neuroses, Headache, Migraine, Vertigo, Writer's Cramp and Allied Disorders, Facial Paralysis, Hypochondriasis. It will be seen that some diseases not generally classed as functional are included, and others, such as Narcomania (using the word in a general sense), are omitted.

The account of each disease is pleasantly written, and the varieties generally met with are clearly sketched out. The treatment is suggestive, and of course it is impossible to be very definite in describing the treatment of functional diseases, but fuller rules for diet might with advantage be given. The author alludes to diet charts, which he finds useful in practice, but of which he does not give any examples.

In some cases the author's directions seem hardly wise. For instance, in dealing with the treatment of dyspepsia, he says that green vegetables may generally be allowed, and further on, "Whenever there is much flatulence, all kinds of starchy food—*s.g.*, bread,

potatoes, rice, &c., must be avoided." In practice we have always found cabbage, cauliflower, and similar vegetables promoted flatulence, thin toast being well borne, whilst baked potatoes, if sufficiently cooked, have almost always agreed well in dyspepsia, whether flatulent or not.

The whole book will be found suggestive and helpful, dealing, as it does at length, with so many subjects which in ordinary text-books are dismissed in a few lines.

There is a very poor index. There are only two entries commencing with O, one with R, and none with P, although Paralysis, facial, Points douloureux, and Pyrosis, might well appear under the latter.

The Table of Contents is fuller, but not being alphabetical, and each subject not having a separate line, it is not much use for reference.

Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie. Redigirt von DR. E. ZIEGLER und DR. C. NAUWERCK.
Dritter Band. Erstes Heft. Jena: Fischer. 1888.

WITH this volume the *Beiträge* appear under a new title and in an enlarged form. While Ziegler and Nauwerck are still the responsible editors, they are now assisted by a large number of the most eminent professors of general pathology and pathological anatomy in Europe. The pages of the new journal are open to works on pathology coming from all sources, and not only for short papers, but also for monographs and longer treatises. We most cordially wish the editors success in their undertaking.

In the present number the first paper is by Professor Klebs, of Zürich. He describes the pathological appearances in two women who died in pregnancy—one in the sixth month, with jaundice and convulsions; the other at full time, also jaundiced and extremely anæmic. In neither was there acute yellow atrophy of the liver, but the organ showed hæmorrhages of different sizes. Hæmorrhages were also found in other parts—brain, kidneys, &c.

In the small branches of the portal vein, in the veins of the pia mater, in the vessels of the kidneys and suprarenal capsules, thrombi were found, composed mainly of blood-plates and enclosing hepatic cells. It is not clearly known as yet how these cells got into the branches of the portal vein, but it is clear that they were able to pass through the capillaries of the liver and those of the lungs in

order to reach the other parts where they were found. It is also considered certain that they were the cause of the thrombosis. The paper is one of great interest, and forms a most important addition to our knowledge of the diseases of pregnancy. It is illustrated by two well-executed coloured plates.

The second paper, 70 pages in length, by Dr. Suchanek, gives a most comprehensive account of the normal and pathological anatomy of the "nasal portion of the pharynx." A very complete bibliography is appended to the paper, which is illustrated by four lithographic plates. We can notice only the interesting fact that in some cases of apparently simple erosions of the pharynx microscopic examination showed the presence of tubercle bacilli.

The third paper is on "Interstitial Emphysema of the Vagina, Intestine, and Urinary Bladder, and its causation by Gas-producing Bacteria." The author, W. Eisenlohr, has observed two cases—one of gaseous cysts in the walls of the vagina and intestine; another in which the walls of the bladder were similarly affected. A very detailed account is given of the history of the cases and of the anatomical examination of the parts. Bacteria were abundantly found in the cysts and lymphatic vessels, as well as in the general tissue of the affected parts. The conditions were such as to show that these could not have been putrefactive bacteria which had entered the body *post mortem*. They were very small oval cocci, occurring mostly in heaps. It was found possible to cultivate them, and the growths generated much gas in their development. The gas was scentless, and although a complete quantitative analysis of it was not made, it was shown to contain CO_2 and hydrogen (at least, when oxygen was introduced, and the mixture fired, an explosion occurred, with diminution of volume). Experiments showed that the bacteria were not pathogenic for rabbits or guinea-pigs. Nevertheless, no doubt is entertained that the emphysematous condition of the viscera in the human subject was due to infection by the microbes. This long paper is illustrated by four coloured plates.

The fourth and last paper, by Alex. Favre, "On Meteorism of the Urinary Passages," describes the case of a patient who had for years suffered from pain and difficulty in micturition, and who died with symptoms of severe cystitis. On *post-mortem* examination the bladder, ureters, and pelvis of the kidneys were found enormously dilated with gas. It was suspected that this development of gas was due to the action of bacteria, and such proved to be the case. These microbes were grown on various media, and the conditions

on which their life and increase depend were worked out in the most careful way. They appear as short thick rods, $1.9-2.1\ \mu$ long, $1.1-1.0\ \mu$ broad, sometimes joined in pairs or forming chains, and, when examined in a drop of fluid, exhibiting somewhat active movements. They do not agree with any of the gas-generating bacteria hitherto described. The gas developed in cultures of these bacteria consisted of—

CO₂, 36.15 per cent.

O, 0.5 „ probably due to access of air.

H, 53.2 „

N, 2.9 „

CH₄, 7.25 „

The bacteria were extremely sensitive to the action of acids, and their growth was completely stopped when the reaction of the mixture reached a certain degree of acidity. This was attained by the action of the bacteria themselves, which in their growth developed formic, propionic, isobutyric, and valerianic acids.

Pure cultures were pathogenic for rabbits. Gas, however, was not found at the point of inoculation except the vessels of the part had been previously tied. When the circulation was free the gas, according as it was developed, was probably absorbed and excreted through the lungs. Guinea-pigs were unaffected by the introduction of the organism. For many other details as to the characters of this bacterium we must refer to the paper itself, which is a model of careful and laborious investigation, and is a most valuable contribution to our knowledge of infective diseases. It is illustrated by a coloured plate, showing the appearance of test-tube cultures of the bacterium.

The four papers which this number of the "Beiträge" contains all originate from Professor Klebs' laboratory in Zürich.

Principles of Forensic Medicine. By the late WILLIAM A. GUY, M.B., Cantab, F.R.S., and DAVID FERRIER, M.D., LL.D., F.R.S. Sixth Edition. London: Henry Renshaw, 356 Strand. 1888.

THE sixth edition of this well-known and valuable manual appears under the sole editorship of Dr. Ferrier, the lamented death of his late colleague, Dr. Guy, having thrown upon him the onus of reproducing the work, which he has done, in an amended form, embodying in it the results of seven years' additional research.

The present edition forms a compact and convenient volume, containing more than 150 fewer pages than the cumbrous and bulky edition of 1881.

The size of the page has been enlarged, and it will be observed that thick black type has been used for the headings and points of chief importance. The appendix, on the "Detection and Identification of minute quantities of Poison," has been wisely omitted, all the more important facts contained in it having been included in the various chapters on toxicology.

Five new figures have been added—three illustrating suicidal bullet-wounds (Figs. 36, 37, and 38), one replacing the old figure of spectra of blood solutions (Fig. 40), and one of bacillus anthracis (Fig. 172).

These desirable changes, with such additions and modifications as were necessary to bring the work up to date, have however left the original scope, character, and arrangement unaltered, and Dr. Ferrier is to be congratulated on having provided the student with a trustworthy examination manual, and the members of his profession with a concise as well as a complete book of reference.

The Liverpool Medico-Chirurgical Journal: including the Proceedings of the Liverpool Medical Institution, July, 1888. Liverpool: Medical Institution, Hope-street. Pp. 284.

THIS journal has now reached its fifteenth number, and shows no signs of falling off in the variety or value of its contents. As usual, it contains—Original Articles, Reports on Recent Advances in Medicine and Surgery, Reviews, Notes on New Drugs, and the Transactions of the Liverpool Medical Institute; the latter, including papers read at the Institute and appearing as original articles, occupies more than half of the number.

The most important paper is a continuation of Dr. James Barr's Report on recent practical advances in the treatment of heart disease. Dr. Oertel's treatment of various disturbances of the circulatory system, by mountain climbing, a regulated diet, and the restriction of liquid ingested, is discussed at length. A summary of Dr. Oertel's book is first given; this is followed by an able criticism, in which the *rationale* of the treatment is explained, and the cases suited for it are enumerated. The dangers and the cases in which the treatment is contra-indicated are carefully described.

There is a full index, with plenty of cross references, and well-varied type, a full table of contents, and a shorter table of contents conveniently placed on the back of the cover.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. IX. "Medicine (Popular)—Nywelt." Washington: Government Printing Office. 1888. 8vo. Pp. 1054.

UNDER date "Washington, D. C., June 26, 1888," Dr. John S. Billings, Surgeon, U. S. Army, presents the ninth volume of the Index-Catalogue of the Library of the Surgeon-General's Office to General John Moore, Surgeon-General of the United States Army—carrying the work on from "Medicine" to "Nywelt." We have nothing but praise for the librarian and the manner in which he is producing this epoch-making catalogue.

This volume includes 13,151 author-titles, representing 6,834 volumes, and 12,818 pamphlets. It also includes 9,999 subject-titles of separate books and pamphlets, and 29,120 titles of articles in periodicals.

The "Index-Catalogue," as far as published up to the present, contains 100,130 author-titles, representing 51,393 volumes and 85,720 pamphlets, as well as 93,154 book-titles, and the subject-titles of 307,351 articles in journals.

Medical and Surgical Report of the Tyrone County Infirmary for Year 1887. Omagh: Printed at the "Tyrone Constitution" Office, 22 High-street. 1888.

WE have often noticed in these pages with pleasure the good medical and surgical work done in the Tyrone County Infirmary year after year.

During the period dealt with in the Annual Report now before us, 495 patients were admitted to the hospital; 128 patients were refused admission; 34 single and double trusses were issued, and 1,575 patients from all parts of the County Tyrone were prescribed for gratuitously. In all, 2,212 patients sought relief at the Institution during the year. The death-rate was rather higher than that of the previous year, but the cases were very severe, and the number of dangerous operations was considerably in excess of former years.

The total expenditure was £1,492 5s. 4d.; the average cost of each occupied bed was £30 1s., and of each patient £3 5s. 5d. The average number of patients daily in the hospital was 41, and their stay in the wards was 25 days. Further information as to admissions, discharges, &c., will be found by referring to a series of tables appended to the Report.

The list of operations show a more than fair array for a County Infirmary, while the cost per occupied bed contrasts favourably with that in other hospitals in large towns.

Letts's Medical Diary for the Year 1889. London: Cassell & Co.

THE Publishers of the "Letts's Diaries Company, Limited," have forwarded a copy of this excellent diary for review. It contains a wonderful amount of useful information in a singularly small space, and is of very convenient size, so that it can be carried with comfort in the breast pocket of the physician's or surgeon's coat.

We can heartily recommend this diary to our medical friends, whether in town or country.

The Nursing Record. London: Sampson, Low, Marston, Searle, and Rivington (Limited).

THIS organ of the nursing sisterhood is carried on in the excellent spirit it commenced with. It contains much that is interesting and much that is useful, and preserves throughout a high tone, calculated to keep up the *morale* of the nursing profession. That it is being recognised as it deserves is shown by its size having already been increased. The paper and printing are calculated to excite the envy of those who have to read the weekly medical journals.

DISLOCATION OF THE FOOT BACKWARDS.

DR. A. F. BOCK, St. Louis, Mo., reports (*St. Louis Medical and Surgical Journal*, June, 1887) a case of dislocation of the foot backwards in an elderly woman. Reduction was easily accomplished, under chloroform, by grasping the foot round the toes, extending forcibly, then suddenly flexing, and at the same time, with the other hand, pushing the astragalus forward. The latter slipped into its place with an audible jerk as the foot assumed its natural position.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.*

By WALTER G. SMITH, M.D.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic in Ireland, Trinity College, Dublin.

Art. 4. Amylene hydrate.

- „ 1. Antifebrin.
- „ 2. Antipyrin.
- „ 8. Cardiac Tonics.
- „ 7. Methyal.
- „ 3. Phenacetin.
- „ 6. Salufer.
- „ 5. Sulphonal.

1. *Antifebrin* (Acetanilide).—An excellent summary of recent literature in reference to antifebrin is given in the *Medical Chronicle*, July, 1888, and to it we are indebted for the following:—

Since Cahn and Hepp published the first account of this drug in 1886, more than 100 papers have appeared in various languages concerning it, and many additional facts have been recorded with regard to its physiological action and uses. In using antifebrin it is important to remember that it is not readily soluble in cold water—requiring 189 times its own weight for solution—but it dissolves easily in pure ether and alcohol, and is fairly soluble in liquids containing alcohol, as wine. The drug can be readily administered in the form of powder, or in cachets. There is some diversity of opinion as to the range of dosage, but according to the majority of observers 4 to 7 grains are a suitable dose in febrile

* The author of this Report, desirous that no contribution to the subjects of *Materia Medica* and *Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

cases, which may be repeated two or three times, but, as a rule, 30 grains a day is a sufficient quantity; much, however, depends upon the ailment. Phthisical, weakly, and anæmic patients, seem easily affected by antifebrin, and to require small doses. Large quantities are apt to cause cyanosis, cardiac weakness, and collapse.

In typhoid fever, 4 grains every six or eight hours are often sufficient. In rheumatic fever and pneumonia larger doses are usually required. For the relief of pain in neuralgia, &c., from 8 to 15 grains may be given for a dose, and even in doses of 2 grains it efficiently reduces temperature. Children seem to bear antifebrin well, and Widowicz, who has had extensive experience of its employment in the febrile diseases of children, says $1\frac{1}{2}$ grains may be given to those aged three or four years, while doses of 3 or $4\frac{1}{2}$, or even $7\frac{1}{2}$ grains, may be administered to older children. It is worthy of remark that antifebrin scarcely ever causes a cutaneous rash like other antipyretics. Sometimes the profuse sweating is accompanied by sudamina and redness of the skin. Although comparatively insoluble, antifebrin is readily absorbed, for its effects on temperature are usually noticeable within an hour, and sometimes appear in a quarter of an hour. The duration of the reduction of temperature is usually from three to six hours; but, of course, much depends upon the dose and the ailment. When the temperature rises again, chilliness is sometimes noted, but rarely rigors. Almost all observers agree that shivering is less common after antifebrin than after kairin, thallin, and antipyrin. The exact cause of the temperature fall has not been satisfactorily determined, but it is probably due both to increased dissipation of heat, and also to diminished heat production.

Although introduced at first only as an antipyretic remedy, antifebrin has since been strongly recommended, especially by French observers, as a sedative to the nervous system—*e.g.*, in locomotor ataxy, sciatica, lumbago, and other nervous ailments.

As a hypnotic it has been highly spoken of by many observers in affections of the nervous system, as well as in febrile conditions. Kell records a case of acute alcoholism, with rapid pulse and high temperature, in which sleep followed two doses of 10 grains, and became profound after a third dose. The patient woke after a five hours' sleep much better.

2. *Antipyrin*.—This drug maintains its reputation, and continues to be largely used. As an anodyne, M. Germain Sée was the first

to call attention to the very marked influence of antipyrin over pain, whether administered by the mouth or hypodermically. Since he published his series of cases the drug has been employed tentatively in most civilised countries, and the reports are now coming in. With very few exceptions the experiments have been successful. Fränkel, of Berlin, in order to test its anodyne properties, substituted antipyrin for morphin injections in all the cases under his care. In not a single case did he fail to give relief. He employed it in 5-grain doses, repeating the injection in an adjacent spot if necessary. He proved that the local action of 5 grains of antipyrin was about the equivalent of a thirtieth of a grain of morphin. The influence of the drug was manifested in about fifteen seconds, and lasted from six to eight hours. He expresses the conviction that antipyrin may be used with advantage in many cases in which morphin is at present employed. It produces no disagreeable after-results apart from the slight pain of the injection itself. Hirsch, of Hanover, is not less affirmative after a trial of the drug in seven cases of severe rheumatic and neuralgic pain. In the United States, Dr. Waugh, of Philadelphia, has employed it successfully in a series of cases of neuralgia, muscular rheumatism, sciatica, &c. In the treatment of sciatica the relief was more prompt and at least as marked as could have been obtained from the use of morphin. He used it in doses of from 2 to 5 grains. Dr. Arca, Professor of Medicine at Buenos Ayres, himself a sufferer from chronic rheumatism, was treated by M. Sée by means of a hypodermic injection of 15 grains of antipyrin, together with from 30 to 60 grains by the mouth, daily. The result was marked relief, though the pain returned directly he discontinued the treatment. There seems no reason to doubt that in antipyrin we possess a powerful anodyne for pain of nervous or rheumatic origin. Dispensed in the form of tablets, it is easily dosed, and may be administered either hypodermically or by the mouth. Beyond the smarting which follows the injection, no after-effects of moment are produced, and it has rarely been known to give rise to inconvenient, much less toxic, symptoms (*Brit. Med. Jour.*, Jan. 7, 1888).

Dr. J. Ogilvey renews his recommendation of antipyrin in migraine. He finds that some cases require larger doses than the 8 grains (hourly repeated) which he first advised, and that double that quantity will then be effectual. For such as are unable to leave home or enjoy travel, to go into crowded rooms, or to venture on certain articles of food and drink, or even medicinal

tonics, there is in antipyrin a promise of immunity from the dreaded headache (*Brit. Med. Jour.*, Jan. 14).

Some interesting and practical notes on antipyrin are contributed by Dr. W. T. Brooks to the *Brit. Med. Jour.*, May 19.

Dr. Kingsbury adds his testimony, based upon the results of treating twenty cases of migraine. Several of the patients having suffered for over ten years, and finding all drugs useless, had become reconciled to being periodically prostrated for one or two days. In every case he ordered 8 grains of antipyrin, dissolved in water or lemonade, to be repeated each half hour until cured, the patient to remain lying down. Most of the cases were quite cured by two powders, but the most obstinate yielded to three, and in no case did the antipyrin fail. A cup of warm tea sometimes seemed to help, and the only inconvenience due to the treatment was, in a few of the cases, considerable sweating.

Many of the patients can hardly credit that instead of being utterly helpless for twenty-four hours they can now cut short an attack in one hour.

There is another great advantage in using antipyrin, and that is that it prevents as well as cures these attacks. One lady, who cannot remember having fewer attacks than three a month, each lasting about thirty-six hours, has been quite free for eight weeks, and this she attributes solely to the occasional use of an antipyrin powder (*Brit. Med. Journ.*, Dec. 24, 1887).

I can confirm these statements, and consider antipyrin to be a most valuable remedy in neuralgic affections.

M. Chouppe has called attention to the good effects of antipyrin in uterine pains after parturition, or in dysmenorrhœa. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of an irritable temperament. It does not interfere with the oxytocic action of ergot (*Brit. Med. Journ.*, Dec. 17, 1887).

Dr. Laget employed antipyrin with complete success in relieving severe labour-pains, continuing for upwards of two days, and which had resisted opiate enemata. The drug was administered by enema. 2 grammes in 100 grammes of water, repeated in an hour (*Brit. Med. Journ.*, Jan. 28, 1888).

Hence it appears, as pointed out by Dr. Neudörfer, that the name "antipyrin" does not represent the whole value of the drug, and that its anodyne and antiseptic properties are of equal, if not greater, importance. The author has often observed that the

hemispheres of women disappeared for a long time after a single subcutaneous injection of antipyrin. The drug was decidedly preferable to morphin, and was, in many respects, quite equal to cocain. It prevents putrefaction and kills bacteria, and may be used for surgical purposes in a 5 per cent. solution (*Brit. Med. Journ.*, Jan. 21, 1888).

Unpleasant Effects from Antipyrin.—Prescribers who have made much use of antipyrin as an analgesic, have been for some time aware that it was liable now and then to give rise to symptoms of an extremely disagreeable kind. Dr. Allen Sturge records an interesting example of idiosyncrasy, which deserves to be borne in mind. A member of his family liable to migraine was attacked in the ordinary way a few days ago, and he administered for the first time a dose of 5 grains of antipyrin in powder, with the following curious result:—Five minutes after taking it, the “deadly sickness” which was previously present seemed to give way, and an “expanding sensation” was felt, rising from the stomach upwards. Almost immediately she sneezed violently for about twenty times running without pause. The face and eyes became deeply suffused, tears began to flow, quantities of mucus flowed from the nose, the breathing became hard and laboured, accompanied by a feeling of suffocation; there was complete inability to lie down. A violent cough shortly came on, and large quantities of mucus were expectorated; at the same time there was very profuse sweating.

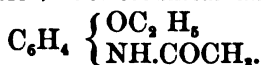
After these phenomena had lasted for about half an hour, intense itching was felt on the insides of both thighs, and on examination there was found a thick outcrop of urticaria, which soon extended on to the abdomen. There was also a strong coppery taste in the mouth—not continuing, but coming on in violent bouts—and an equally strong smell of the same metallic nature, also intermittent. There was loud singing in the ears, which felt intensely congested. The pulse was quick and very full.

After the symptoms had lasted about three-quarters of an hour from the commencement, they gradually disappeared, some tightness of the chest and running at the nose remaining for four or five hours longer. The sickness accompanying the migraine disappeared completely as soon as the drug had begun to work; the headache also disappeared for a time, but came back slightly about four hours afterwards (*Brit. Med. Journ.*, Feb. 4, 1888).

Two cases comparable to the above were recently mentioned in the *New York Medical Record*. In one case, related by Dr. C. T.

Barber, of Brooklyn, a man took 15 grains immediately before going to bed. He was no sooner in bed than intense itching, starting from the face and extending over the whole body, began to annoy him; the whole body was soon covered by an erythematous blush, which quickly resolved itself into characteristic urticaria. The face was so markedly swollen that the patient's features were entirely obliterated. The urgent symptoms quickly disappeared after the administration of an emetic, and after mild purgation the patient was again restored to his usual health. In the other case Dr. Whitehouse, of Santiago, gave $7\frac{1}{2}$ grains to a child; in two minutes there was intense pain in the stomach, followed by general urticaria, and finally by loss of consciousness; one-seventieth of a grain of atropin was administered, and in a few minutes the child was well.

3. *Phenacetin* is a body analogous in its constitution to antifebrin. Its technical name is para-acetphenetidin, and its formula



It is a nearly white, inodorous, crystalline powder, and perfectly tasteless. Soluble with difficulty in water, a little more soluble in glycerin, but more freely in alcohol. Insoluble in acids (except glacial acetic acid) or alkaline liquids. It was introduced by Drs. Kast and Hinsberg in 1887, and seems to be a reliable antipyretic. Dr. Kobler (*Wien. mediz. Wochensch.*, 1887) and Dr. Hoppe have reported favourably upon it, and Dr. Osborne Grenfell (*Practitioner*, May, 1888) shows that it is an efficient antipyretic, and that in cases of pyrexia the action of the drug begins within half an hour after administration. The patient generally perspires freely, and feels drowsy, but comfortable. The drug has been extensively used in the Wandsworth and Clapham Infirmary, not only as an antipyretic, but also as an analgesic in neuralgia, and with good results. The most satisfactory dose for an adult is about 8 grains, and children bear it well. In one case the urine became discoloured, but no untoward effects were observed.

Dr. Leyland Roe also found phenacetin to act admirably as an antipyretic in from 4 to 12 grain doses. It exerts a greater and more prolonged effect upon the temperature than antipyrin, and causes neither rigors, nor vomiting, nor nausea, but rather a sense of well-being—the patient frequently becoming cheerful and desirous of food (*Brit. Med. Journ.*, May 26th, 1888).

Dr. Macnaughton Jones specially recommends phenacetin in the evening pyrexial rise of phthisical cases, and states that it does not produce any collateral unpleasant effects.

4. *Amylene Hydrate*.—A new hypnotic, which appears to possess certain advantages, has been recently introduced by Professor v. Mering. In its physiological effects it seems to occupy an intermediate position between chloral and paraldehyde. Although sold under the name of amylene hydrate, it is an isomer of amylic alcohol ($C_6H_{12}O$), and its constitution appears to be that of tertiary amyl alcohol $\left. \begin{matrix} (CH_3)_3 \\ C_3H_7 \end{matrix} \right\} C.OH$; i.e., dimethylethyl carbinol.

It is a clear, colourless, slightly oily liquid, sp. gr. 0.81; boiling point $102.5^\circ C$. It has an odour resembling paraldehyde, with a faint suggestion of camphor: it is warm in the mouth, and has a hot aromatic taste, with a slight pungent after-taste. It is only slightly soluble in water (1 in 8), though freely in alcohol, and may be given with extract of liquorice (v. Mering), or in mixture with red wine and sugar (Scharschmidt).

Von Mering gave the drug to sixty patients in doses varying from 46 to 77 grains; he observed no unpleasant after-effects, no nausea, headache, or digestive disturbance. Scharschmidt found that so large a dose was not necessary, although he corroborates v. Mering's statement that even then there was no appreciable disturbance of the respiration or pulse-rate. In 80 per cent. of the cases sound sleep of from five to seven hours' duration was procured by doses which did not exceed 45 grains, and were in some instances as low as 20 grains; by repeating the dose, or giving a larger one, sleep was, in all the cases where failure was at first noted, subsequently obtained. In 24 of Scharschmidt's cases there was much excitement, and by producing sleep under such conditions as mania, delirium tremens, and epilepsy or hysteria with delirium, amylene hydrate appears to have proved itself superior to urethan (*Brit. Med. Journ.*, Jan. 14, 1888).

Dr. G. Avides has made a number of experiments with amylene hydrate in the clinic of Professor Riegel at Giessen. The drug was tried in various internal diseases, and, in all cases of disordered circulation, it is preferable to chloral, since the latter considerably diminishes the pressure in the vascular system. As a hypnotic it is less powerful than chloral, and more powerful than paraldehyde. After small doses, sleep lasts from two to three hours; after large

doses (2.0 to 3.2 grammes), from six to eight hours. Respiration was not affected, and there was no change in pulse or blood-pressure, except retardation of pulse. There was no bad taste in the mouth, or disagreeable smell of the breath on awakening, such as occurs after paraldehyde.

It may be administered by enema, *e.g.* :—

R.

Amylene hydrate,	-	-	3 grammes.
Aq. destill.	-	-	-
Gum. Arab. āā	-	-	25 grammes.

M.

(*Brit. Med. Journ.*, March 10, 1888).

Dr. F. Girtler has also tried the drug in 61 cases of various diseases, and he prefers it to chloral, as it has no injurious effect on the heart. Average dose for adults, 3.5 grammes (52 grains), sometimes smaller doses were sufficient; but at certain times larger doses, such as 6 grammes, had to be resorted to. In a few cases headache and slight oppression were complained of, but there was no vomiting (*Berl. klin. Woch.*, 6. 1888).

Dr. Buschau thinks amylene hydrate a useful addition to our stock of hypnotics. He tried it in a number of cases in a lunatic asylum, and his net results were: satisfactory sleep in nearly 80 per cent. of the cases; tolerably good sleep in 12 per cent.; failure to induce sleep in 8 per cent.

Amylene hydrate is expensive at present, nearly 30s. a pound.

Dr. Laves reports that more frequently than any other hypnotic it induces deep and refreshing sleep. Unpleasant consequences (excitement, &c.) were very rarely observed; dangerous results never (*Berl. klin. Woch.*, 21 Mai, 1888).

Some other tertiary alcohols, viz., tri-methyl carbinol and dimethyl carbinol, have been investigated by Russian observers, but do not seem as yet to have attracted much attention in this country (*Prov. Med. Journ.*, Jan. 2, 1888).

5. *Sulphonal*.—Under this empirical name, suggested by Bayer & Co., is introduced a new hypnotic discovered by Professor Baumann. It is an oxidation product of the union of ethyl-mercaptan with acetone, rejoices in the appalling name of "diethylsulphondimethylmethane," and its rational formula is $(\text{CH}_3)_3\text{C}-(\text{C}_2\text{H}_5\text{SO}_2)_2$.

It is a very stable compound, crystallises in large colourless

tables, and is perfectly devoid of taste and smell. It dissolves in 18 or 20 parts of boiling water, in 100 parts of water at the ordinary temperature, and is easily soluble in alcohol or ether. It is not affected by acids or alkalies.

Professor Kast, of Freiburg, has tested it therapeutically, and has nothing but praise for this new addition to the *materia medica*: Twenty experiments with sulphonal on healthy men showed that doses of three or four grammes were borne by adults without the least discomfort or disagreeable after-effect. Employed medically the drug has been given to 60 patients, and 300 observations of its effects were made (Professor Cramer gave it 200 times in the Marburg Lunatic Asylum). The results, almost without exception, were that the patients sank within from half an hour to two hours into a tranquil and sound sleep, lasting from five to eight hours, and awoke feeling perfectly comfortable. A few felt tired and sleepy next day. The digestion, pulse, and temperature were unaffected, and it is curious that no ataxy of any degree or kind was present, whereas this was the most prominent symptom in dogs after large doses. The ordinary dose for man is two grammes (half a drachm). Sulphonal appeared most efficacious in cases of sleeplessness in nervous subjects, but was given with benefit in all kinds of cases, including even cardiac valvular disease (*Brit. Med. Journ.*, Apr. 21, 1888, from *Berl. klin. Woch.*).

Dr. Rabbas confirms Kast's conclusions, and considers sulphonal in doses of from 2 to 3 grammes to be a better and safer hypnotic than amylene hydrate and paraldehyde in larger doses. It does not act so quickly as chloral, but its effects are more enduring. Sleep is induced usually within half an hour. It has no injurious action upon the heart, respiration, appetite, or digestion (*Berlin. klin. Woch.*, April 23rd, 1888).

Drs. Rosin and Oestreicher also conclude that in moderate doses—i.e., 2 grammes, this drug is a non-injurious hypnotic. It is best given in capsules or tabloids (*Brit. Med. Journ.*, May 7, 1888, from *Berl. klin. Woch.*).

Dr. Lovegrove, on the contrary, found its effects upon patients very discouraging. For several hours after taking the drug no appreciable effect could be observed, but during the greater part of the following day there was extreme drowsiness and considerable cyanosis. The dose given is not mentioned. At present price (May, 1888), 16s. per ounce, it is scarcely likely to supplant its older rivals, morphin and chloral (*Brit. Med. Journ.*, May 26).

6. *Salufer*.—Mr. W. Thomson has discovered that alkaline fluorides are powerful antiseptics, and has proposed as the one best suited for general use the neutral sodium silico-fluoride (*salufer*). It is a white inodorous compound, sparingly soluble in water, about $2\frac{1}{2}$ grains per ounce. Mr. Mayo Robson has used *salufer* extensively in his surgical practice, and is well satisfied with it. A solution of 1 grain to an ounce of water is strong enough for ordinary purposes, and, being unirritating, it is especially suitable for syringing out cavities. He believes that it will prove of great use to obstetricians, and it is a most efficient deodoriser. The solution acts on the glaze of porcelain after long use, and corrodes steel instruments, but sponges are unaffected by it (*Brit. Med. Journ.*, May 19, 1888).

Drs. Hayward and W. J. Sinclair speaks highly of it in obstetric and gynæcological practice, and Mr. Penfold of it in dental practice.

7. *Methylal*, a new hypnotic which may possibly render good service in therapeutics. Several observers have studied its action—viz., MM. Personali, Mairat, and Combemale. It is rapidly eliminated, and leaves no ill effects after awakening. It possesses a sweet taste and ethereal odour, and, being soluble in water, is easily administered. In cases of mental disturbance it appears to be worthy of further trial, judging from the results obtained by MM. Mairat and Combemale. The dose is from 3 to 5 grammes and upwards (*Brit. Med. Journ.*, Oct. 22, 1888).

8. *Cardiac Tonics*.—*Digitalis* still holds its place as the most powerful heart-tonic which we as yet possess, and the most permanent in its effects. But, as we all know, there are good reasons for the zealous efforts made of late years to find some other means of strengthening the heart's action safely as well as certainly in cases of failure of compensation.

Although *strophanthus* has now been on its trial for over two years, it is difficult to decide in exactly what cases of cardiac disease it is preferable to *digitalis*. Nearly all observers confirm Fraser's original statements without adding any important new facts. However, Guttmann maintains that it cannot compare either as a heart-drug or as a diuretic with *digitalis*. According to observations in Professor Bamberger's clinic, *strophanthus* was used with success in (1) every kind of disease of the cardiac muscle, in which its effect exceeded that of all other remedies; (2) valvular failures, in which the cardiac muscle could not do the necessary

work, either owing to commencing degeneration or to slight hypertrophy; (3) those cases of renal diseases in which the action of the heart was impaired or normal, but where there was in any case an increase of the cardiac activity, and thus indirectly increased diuresis. Success was not to be expected in: (1) too advanced degeneration of the cardiac muscles; (2) valvular failures with great hypertrophy, where the greatest possible quantity of work was already done, and an increase of the cardiac energy was no longer possible; and (3) in renal diseases with cardiac hypertrophy. Though the indications for the use of strophanthus were in general exactly the same as those of digitalis, the new remedy had, nevertheless, the advantage that its effect was produced in from ten to fifteen minutes, and that it had no cumulative effect, and could thus be given for a long period of time. The tincture recommended by Fraser (1:20), or the strophanthin itself was used. After the administration of the first dose nausea and increased action of the bowels were observed in susceptible persons. Strophanthin could be given by the mouth without any disagreeable after-effects.

Sparteïn does not appear to have attracted much attention (*Brit. Med. Journ.*, Dec. 31, 1887; Jan. 21, 1888; Feb. 11, 1888).

PICROTOXIN IN EPILEPSY.

DR. ANNIE NEWS reports a case (*New York Medical Journal*, July 14, 1888) of the cure of epilepsy by picrotoxin. The patient, aged fourteen, had been for six months affected with petit mal. The attacks had increased in number, his intellect was getting impaired, and he had begun to get a slightly idiotic look. Brown-Séquard's preparation profoundly depressed his system, and did not lessen attacks. Picrotoxin $\frac{1}{80}$ gr. four times daily had a rapid effect. In a few weeks the attacks ceased. The remedy was gradually withdrawn, and after five years the attacks had not recurred, and the boy did well at school.

COBALTO-NITRITE OF POTASSIUM.

J. W. ROSSEVELT, M.D. (*New York Medical Journal*, Aug. 25, 1888), recommends cobalto-nitrite of potassium (Sadler's formula= $\text{Co}_2(\text{NO})_2, 12\text{K}_2 + 2\text{H}_2\text{O}$) in cases where it is desirable to lower arterial tension or to produce any of the physiological effects of the various nitrites now in use, and to sustain these effects for some time. The author has found the effects more lasting and unaccompanied by fulness, throbbing, or pain in the head when tried in cases where nitro-glycerine had caused these symptoms. The dose usually given was half a grain every two to four hours.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SAMUEL GORDON, M.D., F.K.Q.C.P.I.
General Secretary—W. THOMSON, M.D.

SECTION OF SURGERY.

President—HENRY FITZGIBBON, M.D., M.Ch., President of the Royal
College of Surgeons, Ireland.
Sectional Secretary—MR. W. THORNLEY STOKER.

Friday, November 9, 1888.

The PRESIDENT in the Chair.

The President's Address.

The PRESIDENT delivered an address on Syphilis, outlining its history from a period over 2,000 years B.C., refuting the suggestion that it was introduced into Europe after the discovery of America; describing the nature of the disease as a specific one produced by the presence of a morbid virus transmissible by contact; noting its early stages in the period of incubation during which the virus was latent; secondly, the periods of eruption of varying severity, and yet with a degree of order and regularity; and, finally, emphasising as an ascertained fact that one attack of the disease generally confers immunity against a second. The President quoted statistics showing the successful operation of the Contagious Diseases Act in garrison towns, and advocated the desirability of the extension of this measure.

Pulsating Tumours of Bone.

DR. ROBERT M'DONNELL read a paper on pulsating tumours of bone. He detailed the case of a lady who had been sent to him by Mr. Erichsen, nearly five years ago. She then suffered from a pulsating tumour over the upper part of the fibula, which he and Mr. Erichsen agreed in

regarding as probably a hæmatoid sarcoma of the bone. It continued for some time to increase in size. Operation was delayed on account of the lady's pregnancy, but she was directed to wear an elastic stocking. She suffered after delivery from phlegmasia of the other limb, which caused her to remain in bed for nearly six months, still, however, wearing the elastic stocking. When she came again under Mr. M'Donnell's observation, some time after her parturition, the tumour was found to have disappeared.

The case, which the result showed to have been probably an osteo-aneurysm, was of much interest as pointing to the difficulty of diagnosing between osteo-sarcomata and osteo-aneurysm. In this particular case the resemblance to the former disease was so marked, that but for the delay caused by the pregnancy of the patient, an operation (which the result showed was not necessary) would probably have been performed.

DR. MAPOTHER said his case (to which Dr. M'Donnell had referred) arose some twenty-six years ago, and there was a previous one treated by Dr. Bickersteth, of Liverpool. In his own, the patient, aged twenty-eight, got a knock on the shin, and four months afterwards a tumour as large as a walnut formed, half of it projecting beyond the level of the tibia without discolouring the skin, while the corresponding portion went into the substance of the bone. There were a distinct distensile pulsation, thrill, and bruit. Aided by Dr. Hutton, he removed the cuticle by potassa fusa, and then applied a cautery. After an interval of ten days, intense hæmorrhage occurred as of a nævus suddenly wounded. In a few days the nævus matter came away, leaving a granulated surface. Thereupon a most rapid cure took place. Sixteen years subsequently to the operation—now ten years ago—he had heard of the patient as being alive and well in New Zealand. There was only a slight cicatrix, and thick bone around. Denying the possibility of non-malignant aneurysm, Holmes at first assumed that the case was one of mistaken diagnosis; but in his recent publication he regards it as a non-malignant case, and both it and Dr. Bickersteth's as examples of what might be called osteo-aneurysm.

MR. WHEELER concurred as to the rarity of such cases. He had himself seen two cases of pulsating tumours of bone, both were sarcomata—one in the practice of Mr. Butcher, the other was in his own. In the case which was under his own observation, the seat of disease seemed to be the lower end of the tibia, which was distended. There was distinct bruit. He amputated at the knee-joint, revealing a tumour which Dr. John Barker described as an osteo-sarcoma. Eighteen months later the patient died of tumour in the liver, and he believed also in the spleen. He regarded Dr. Robert M'Donnell's case as one of aneurysm by anastomosis. He asked whether Dr. M'Donnell attributed cure to the

rest and pressure the patient had while suffering from phlegmasia dolens. In Guy's Hospital Reports a case was recorded of aneurysm by anastomosis at the lower end of the tibia, afterwards implicating the astragalus. Amputation was effected at the middle third of the leg, and there being no record of a return of the affection, he presumed it was one of an innocent nature, such as Dr. M'Donnell had described.

MR. WILLIAM STOKER said he had had a case of pulsating tumour starting from the fibula, in a boy, aged twelve. At first the tumour seemed localised to the shaft of the fibula so distinctly that he determined to remove the upper part, but the child's mother would not consent, and she took the child away. Rapid distension having taken place, the child was brought back in a month, and the pulsation was notable, while the circumference of the limb had increased two inches in the interval. Although the rapidity of the distension made the result doubtful, yet he amputated above the knee, and the then child was now a young man alive and well. Dr. Phineas Abraham had pronounced the tumour to be a giant-celled sarcoma. There had been no return of the tumour.

MR. HENRY GRAY CROLY called attention to the fact that the discussion had extended both to the subject of osteo-aneurysm and that of malignant disease attacking the bone, while Dr. M'Donnell's paper was conversant with a case which was not malignant. So, too, was Dr. Mapother's case. Osteo-aneurysm, it was agreed, was a disease that was not malignant, and the great interest in Dr. M'Donnell's case was the cure of the aneurysm. He did not understand how phlegmasia dolens, even occurring in the same limb, could affect the cure. He had had a case of osteo-sarcoma, a girl, aged eighteen, with a growth involving the lower end of the femur. Dr. M'Donnell concurred with him that her only chance was by amputation below the trochanter. The operation was performed, and she made a good recovery. At the end of four or five years, however, he was informed by the doctor of the district in which she resided that she was attacked in the upper extremity at the opposite side with the same disease, which rapidly proved fatal.

DR. BALL said they had at present a case in Sir Patrick Dun's Hospital in which the difficulty of diagnosis suggested by Mr. Croly presented itself—namely, of distinguishing between pulsating sarcoma of bone and pure angioma. On admission, the patient complained of a small tumour on the top of his head, with intense pain in the back of his head and neck. The tumour was soft, and no pain could be detected in it; but very soon it enlarged and the pulsation became marked, a train of cerebral symptoms developing apparently from pressure. He had periodical attacks of vomiting. Double optic neuritis and loss of sight ensued. Believing that if they arrested the blood supply, which seemed to be derived from the meninges of the brain and the arteries outside the cranium, they might be able to retard the rapid progress of the tumour,

he ligatured simultaneously the two external carotid arteries above the facial artery. The result was an amelioration of the symptoms. Indeed, the vomiting entirely disappeared, the pulsation ceased, and the tumour decreased in size till it became imperceptible. However, now at the end of a month, the symptoms were again developing—slight pulsation and a severe pain in the head. There were veins as big as the little finger radiating round the skull, and the blood could be squeezed out, and a small hole detected where the communication existed. The case was one of angioma perforating the skull.

DR. MYLES did not think Mr. Wheeler was justified in the nomenclature which he used to describe Dr. M'Donnell's case.

DR. M'DONNELL, in reply, said he had delayed publishing his case until satisfied that the lady was really and permanently cured. His object in bringing it forward was to elicit discussion, in the hope of ascertaining whether, at any period of its growth, they could tell the malignant from the non-malignant tumour, and so be in a position to decide as to an early operation. In his own case, he hardly doubted that if the lady had not been pregnant she would have lost her limb. He told her husband, and Mr. Erichsen told her husband, that they looked forward to amputation as the only chance of saving her life. But, happily, pregnancy made it desirable to temporise, and time revealed what neither of them in the beginning could tell—that they had not a malignant case to deal with at all. Therefore, the real point was—what were the signs by which they might hope to distinguish cases in which operation was necessary, and there was a reasonable chance of cure.

The Section adjourned.

SECTION OF MEDICINE.

President—LOMBE ATTHILL, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. MONTGOMERY, M.K.Q.C.P.

Friday, Nov. 16, 1888.

The PRESIDENT in the Chair.

On the Action of Certain Drugs on the Utero-Ovarian System.

The PRESIDENT read a paper on the the above subject. [It will be found at page 457.]

DR. J. A. BYRNE said it was an established fact, though difficult of explanation, that certain medicines—*e.g.*, savin, rue, and aloes—have peculiar effects on the female generative organs. This effect was not

due to purgation; for it was not found that a good dose of Epsom salts brought on menstruation. No doubt, active purgation had occasionally produced it; but a medical practitioner who wanted to produce an emmenagogue effect would not order sulphate of magnesium. It was difficult to explain exactly how the medicines produced the effect. At the same time, it was abundantly clear that savin, rue, and ergot stimulated uterine action. Hence the necessity of careful examination. He considered it a dangerous doctrine to broach that in the early months of pregnancy ergot might be given with perfect indifference as to the result. Such a procedure did not accord with his experience. In threatened abortion he would feel it his duty not to stimulate but to pacify the nervous system; and no matter how the action of ergot might be explained, it acted as a stimulus to the uterine fibres. Electricity, too, instead of retarding, would probably expedite the expulsion of the foetus. As regards the question of nomenclature, he did not see why the word "emmenagogue" should be discarded; it was as good a name as could be suggested.

DR. WM. MOORE concurred with the President as to the unsatisfactory results from prescribing permanganate of potassium in amenorrhœa. He had tried it for six months, and his experience of it had been most unsatisfactory.

DR. FRAZER also concurred on the same point. Quinine, he believed, had no action on the uterus. Savin in impregnated cases proved, in his experience, a powerful and efficient emmenagogue. Rue and tansy likewise deserved to have their claims investigated.

The PRESIDENT, replying, said he had never experimented medicinally with an impregnated uterus, and he had never given ergot except in cases of threatened abortion. He believed that ergot had no effect in producing abortion, though given with the intent of producing criminal abortion; and his belief was founded on extensive experience in administering ergot as a preventive of *post-partum* hæmorrhage. Ergot was much more likely to prevent than to produce abortion, and he had prescribed it hundreds of times. He had never given Epsom salts as an emmenagogue.

Accidental Rashes in Typhoid Fever.

DR. J. W. MOORE made a communication on this subject. [It will be found at page 497.]

DR. DUFFEY asked whether there had been eliminated the possibility of the rash being due to drugs administered during the course of the disease. Certain persons had idiosyncrasies, arising from which the use of particular articles of food, or the administration of particular drugs, had been followed by cutaneous eruptions. He had himself seen four cases of profuse miliary eruption following the administration of

antipyrin. So, too, an erythematous eruption similar to scarlet fever followed the administration of quinine, while scarlatinal eruption followed the administration of antipyrin, salicylic acid, and other drugs. The action of the food and drugs was explicable on the analogy of septicæmic rashes; because medicaments acted as poison to the system in the same way that poison generated in the system would cause a rash. Rashes occurred in fevers attended with serious blood-changes and disappeared without any marked effect on the patient.

DR. POLLOCK pointed out as remarkable that, while most writers on erythematous rash observed that the rash occurred in the first week or early stage of the fever, in his case the rash did not appear until the third week, although the rose-spots had been out for a fortnight before. The pulse was never very high, but on the night of the 18th day it suddenly rose to 108, and the rash was then noticed coming out over the back, chest, and abdomen. Next day there was a sudden collapse—the temperature fell to 96°, and the pulse was low and very weak. On the following day Dr. Moore saw the patient, and on the day after the rash came out over the extremities. In contra-distinction to Dr. Crocker's description that erythematous rashes were well defined, the rash in this case was diffused and general over the body. In reference to the medicines administered, he had given 2 grs. of quinine, but, as it made the patient deaf, he stopped, and no more was given until after the erythematous rash disappeared. No antipyrin had been given.

DR. WALTER SMITH said there were drug rashes and food rashes; and the explanation given by Dr. Duffey applied to many cases. Most rashes belonged to the erythematous class, and were due to a transitory disturbance of the vascular system of the skin, liable to a rise in four different ways:—First, direct action on the sensory nervous system by drugs; second, reflex irritation from the intestinal tube, produced by articles of diet; third, direct dilatation of the vessels of the skin caused by such drugs as nitrite of amyl, nitro-glycerine, and alcohol; and fourth, the diffuse transudation of irritating drugs through the skin, as the essential oils of copaiba and cubebs, &c. Hence the physician should be careful to avoid positive diagnosis on the one hand, or to be scared by unexpected appearances on the other.

MR. DOYLE did not think Dr. Moore was justified in generalising from particular cases. Instead of reviewing the authorities on the subject of rashes, he thought it would have been better for the author to have given full and particular details of what was observed and done in the cases.

DR. BEWLEY remarked that, in his experience in recent outbreaks of typhoid fever, rashes were more common in the third and fourth weeks of the fever than in the early stages, contrary to what was mentioned in the text-books.

DR. WILLIAM MOORE remarked that, looking for many years at enteric fever, he had seen erythematous eruption, as a rule, early in the disease, not late; and in scarlatina there was an unmistakable temperature, which in his view was the key to a differential diagnosis.

DR. JOHN WILLIAM MOORE replied:—In Case No. 1, no medicine had been administered for some days, and the only possible cause of the efflorescence was the extreme rise of temperature, followed by sweating. It was not true erythema, but an efflorescence on the skin. In Case No. 2, he understood from Mr. Foy that the patient had been getting morphin to produce sleep, but only in small quantities; and that drug could scarcely have had anything to do with the development of the miliary eruption. In Dr. Pollock's case quinine in only two-grain doses had been given several days before the rash appeared, but it disagreed and was stopped. As regards Mr. Doyle's criticism, so far from generalising, the cases in question were brought forward as typical ones, with the object of drawing attention to a rash which occasionally occurred in typhoid fever, resembling scarlet fever, and the object of the paper was to indicate how to distinguish between erythema and true scarlet fever.

The Section adjourned.

PSORIASIS.

THE following ointments are recommended by Dr. L. Brocq (*Revue Générale de Clinique et de Thérapeutique*, No. 8) for the treatment of psoriasis:—*R.* Ol. cadi ver; glycerini amyli; glycerini, sing., 15 grammes; ess. caryophylli, q. s.—*M.* ft. mist. *R.* Acidi pyrogallici, 5–10 grammes; acidi salicylici, 1–3 grammes; vaselini, 100 grammes.—*M.* ft. mist. *R.* Acidi chrysophan., 5 grammes; axungiæ, 15 grammes; lanolin, 85 grammes.—*M.* ft. mist.

LABOUR UNDER THE INFLUENCE OF HYPNOTISM.

AT a meeting of the Académie de Médecine Dr. Mesnet reported a case of labour conducted under hypnotism. The patient was a young hysterical woman, a member of a family who were remarkable for their neurotic troubles. There was no difficulty encountered in the case, and the recovery was complete.—*La France Médicale*, Nov. 12.

INFANTILE ECZEMA.

IN a case of infantile eczema, Prof. Bartholow, besides directions given as to diet, placed the child (aged two years) upon tincture of belladonna, 5 drops thrice daily, or sufficient to cause dryness of the mouth. The object in view is to affect the cutaneous circulation, and thus bring about the desired result.—*Technics*, No. 8. Boston.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY

SESSION 1887-88.

President—ROBERT ESLER, M.D.

Hon. Secretary—JOHN M'CAW, M.D.

Biographical Sketch of the late Alexander Gordon, M.D. By ROBERT ESLER, M.D., President.

PROFESSOR GORDON was not an ordinary man. He made his way as a surgeon to the front rank of the Profession, in spite of disadvantages which would have prevented a less original thinker from ever being heard of.

The name of Dr. Gordon and his inventions are known wherever surgery is taught, or examinations are held. His handbook on fractures of the radius is a standard classic.

He was a most indefatigable worker. The Queen's College Museum bears evidence of the care bestowed on his prepared specimens of fractures.

He was a most enthusiastic teacher; self and professional advancement were forgotten in his intense desire to make the treatment of fractures practical and complete, and in this he succeeded.

His familiarity with all the details of his practice was characteristic of the man, and was equalled only by his mastery of principles.

Dr. Gordon was not a man easy to describe. He was a contradiction in himself. Careless, yet painstaking; amiability itself, yet vindictive to a degree; yielding, while firm; utterly careless of his own person, yet bestowing loving care on that of others; simple as a child, yet a logical genius.

As a teacher he was characterised by great common-sense simplicity, yet he was very thorough in the subjects he taught, and eminently practical. His students were ardently attached to him, and usually spoke of him as "Old Alick," but always in terms of the warmest admiration and the highest regard. Occasionally his temper became ruffled when inattention was manifested in his class, and the offender was called to order in terms not always either parliamentary or professional. "Gentlemen, by attention to what I am saying you may commence the practice of your Profession where I am leaving off," was one of his most pathetic and telling appeals.

As a practitioner he was only fairly successful. His cases both in hospital and private usually did well, but at no time did he ever sufficiently appreciate his own worth. His fees indicated his humility rather than his merit, and consequently his professional income was never large.

As a consultant he was most obliging, and ever ready to place his great experience at the service of his brethren—and he was a trustworthy consultant, never seeking to ingratiate himself with another man's patients, indeed his friends could have occasionally wished that he had been more polite and more presentable.

On one occasion, when the late Dr. P. called upon him to go to a consultation, the Professor of Surgery put on his head the first hat that came into his hands. The said hat being old, dilapidated, and shabby, Dr. P. suggested to him on the door step that, as they were going to the house of a somewhat fashionable patient, it might be well to take a better hat.

"Hold on," said Gordon, and going back into the hall he handed his friend one of his best hats, saying, "Here, if it is a hat you want, here is one," and, closing the door, he left Dr. P. and the hat outside.

Dr. Gordon was born in Saintfield, Co. Down, in 1818, and graduated M.D. in Edinburgh University in 1841. He was afterwards appointed Demonstrator of Surgery in the Royal Academical Institution, and subsequently Professor of Surgery in Queen's College, Belfast.

The portrait, which is now presented by his son and daughter, is a copy of the excellent oil painting, now hanging in the Examination Hall of Queen's College, and presented by his former pupils. He is represented in Academic dress, in the act of demonstrating a fracture.

Dr. Gordon was President of this Society in 1856. In placing his portrait among those of past Presidents of the last thirty years, we leave a memorial of one of the kindest, simplest, most upright, industrious, and original men it has ever been our privilege to know.

TREATMENT OF CHRONIC DIARRHŒA.

DEBOVE, in a communication, claims great success in the treatment of chronic diarrhœa, especially of the tuberculous form, by silicate of magnesium. This remedy he administers in doses of half an ounce to an ounce and a half a day, suspended in a quart of milk. As a result the diarrhœa disappears. The silicate of magnesium is known under the name of *talc* or *steatite*; it is insoluble, inert, and has not heretofore been supposed to have any medicinal properties whatever. According to Debove it promotes the healing of intestinal ulcerations, but seems only to be efficacious by its presence in large quantities. Debove says it is readily and rapidly eliminated from the intestines.—*Boston Medical and Surgical Journal*.

CLINICAL RECORDS.

Clinical Records. By R. FITZMAURICE, M.K.Q.C.P., L.R.C.S.I.; Surgeon to County Kerry Infirmary; Physician to County Fever Hospital.

I GIVE the general features and treatment of the following peculiarly severe cases, as likely to be interesting to the readers of this Journal, omitting the details of daily treatment, as, to my mind, tiresome to medical men of experience:—

CASE I.—B. C.—Right arm caught in machinery, and crushed to pieces from the insertion of the deltoid. Refused to see a medical man, and only required the priest. Forcibly chloroformed, and arm amputated at the shoulder-joint. Had not a bad symptom, and made an excellent recovery.

CASE II.—S., aged twenty, slipped off a plank of timber while carrying a heavy stone. Left leg at the anatomical head of thigh bone broken, and shaft of right thigh. Extensive laceration of upper part of left thigh, extending to perinæum. Both legs brought into position, and lacerated part sutured. Large abscesses formed in the left iliac region, and phlebitis, with immense swelling of limb. After some time, head of bone presented at inner side of thigh, and was extracted with a Lion forceps. After several months, made a good recovery, and while on crutches slipped and fractured shaft of left thigh; made an excellent recovery without lameness, and is now in America doing labourer's work.

CASE III.—C., aged thirty, admitted to Infirmary with compound dislocation of ankle-joint. Astragalus turned outwards. This bone excised, and joint brought into position. Made an excellent recovery without lameness, and is now earning good wages, as workman, at the Forth Bridge.

CASE IV.—J. C., farmer, became semi-intoxicated. Was taken to police station and transferred same night to County Infirmary, suffering from severe pain in the epigastrium and constant vomiting. Supposed to be injured by the police, and made a case of active investigation by Nationalists. No external signs of violence. Every treatment that could be devised was ineffectual to stop vomiting, and he died next morning. *Post-mortem* examination revealed perforation of small intestine by a round worm, and the muscular structure and mucous membrane presented a contused bloody sulcus for about an inch and a half to the point of perforation, where the worm had evidently been embedded for a long period.

CASE V.—T. C., aged twenty-two, became feverish, red spots appeared on instep and knee, manifested very soon severe symptoms of blood poisoning. In the course of a prolonged illness of ninety days he suffered from several attacks of diarrhoea and vomiting, and severe pains in joints, and became emaciated to a degree. Pulse for one month at 160, temperature very irregular, and the morning sometimes higher than the evening tempe-

rature. For several days, congestion of both lungs, evidenced by very fine crepitation at the sides of the chest under the nipples. This alternated with a tumour of the left loin, with pain, tenderness, and dulness on percussion, which, under poulticing, was dispersed. Chest blistered, and general treatment consisted of iron and sedatives. There was great difficulty in preventing bed sores, as the patient's position was necessarily dorsal for several weeks from extreme debility. Very little stimulants were given, as they invariably caused excitement. Patient was kept on a water-pad with air cushion on it, and at times two pillows, stitched together on the length, were found very useful in relieving pressure. Made a perfect recovery, and is now doing duty of bank clerk.

CASE VI.—C. B., aged thirty-five, a most aggravated case of *sycosis menti*. Part was so hardened and tubercular as to give the appearance of malignant disease. After trying all the new remedies recommended, a cure was effected by ointment of iodide of lead, the part being previously sponged with a weak solution (a drachm to a pint) of bicarbonate of sodium.

CASE VII.—Hon. F. D., some weeks after a fall from his horse, got a second attack of erysipelas of the face and forehead. In the course of a sharp illness of three weeks' duration, congestion of right lung set in, evidenced by dulness on percussion at posterior part, with tubular breathing. Sputa containing dark blood, not rust coloured; was treated with half drachm doses of tincture of the perchloride of iron, and three grain doses of quinine, and blistering. Made an excellent recovery.

CASES VIII., IX., and X.—K. M., aged twelve; F. S., aged fourteen; and D. C., aged fourteen—all three cases of marked hip disease. The last case still under treatment. This boy was admitted to hospital with symptoms of hip disease of four months' duration. Hip and knee bent and immovable from intense pain, increased on the slightest motion. Pulse high. Temperature 102°. Limb forcibly straightened under chloroform. A comfrey poultice applied, and a 14lb. weight put on foot over a pulley fixed to footboard of bed, the lower legs being raised on blocks. Is doing well, without pain; temperature and pulse lower. The two other patients sent to their homes, cured by same treatment. Comfrey applied as follows:—Spread, while fresh, on a piece of soft old linen, broad enough to extend from crest of ilium to middle third of thigh, and of sufficient length to encircle both hips. Grated root spread the thickness of a crown piece, on the centre of the linen, in sufficient quantity to cover more than the joint. Each end of linen slit to edge of poultice, to encircle hips and upper part of thigh with a separate piece, and firmly pinned, and then all bandaged firmly on, commencing at the thigh, and alternately around hips. I do not know of *any other treatment* that can compete with this, and I can strongly recommend it for hip and knee-joint diseases, otherwise very incurable, constitutional remedies, of course prescribed in conjunction with local treatment.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl. ; F.K.Q.C.P. ;
F. R. Met. Soc. ; Diplömte in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, November 3, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Oct. 13.	Oct. 20.	Oct. 27.	Nov. 3.		Oct. 13.	Oct. 20.	Oct. 27.	Nov. 3.
Armagh -	25·8	5·2	20·7	46·5	Limerick -	17·5	32·4	22·9	13·5
Belfast -	22·0	22·8	21·4	23·0	Lisburn -	19·3	19·3	0·0	19·8
Cork -	18·6	23·4	16·9	14·3	Londonderry	12·5	10·7	7·1	10·7
Drogheda	8·5	21·1	29·6	12·7	Lurgan -	5·1	5·1	30·8	25·7
Dublin -	22·6	23·5	21·1	23·9	Newry -	17·6	17·6	10·5	14·0
Dundalk -	13·1	17·5	21·8	4·4	Sligo -	14·4	9·6	33·7	4·8
Galway -	13·4	30·3	16·8	26·9	Waterford -	20·8	20·8	23·2	27·8
Kilkenny	8·5	2·4	16·9	25·4	Wexford -	25·7	21·4	8·6	4·3

In the week ending Saturday, October 13, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 18·7), was equal to an average annual death-rate of 21·0 per 1,000 persons living. In Glasgow the rate was 21·7 ; and in Edinburgh it was 18·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 20·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in eight of the districts to 11·6 in Waterford—the 9 deaths from all causes registered in that district comprising 1 from typhus and 4 from diarrhoea.. Among the 96 deaths from all causes registered in Belfast

are 3 from enteric fever and 10 from diarrhœa. The 21 deaths in Cork comprise 1 from typhus, 1 from whooping-cough, and 2 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 166—78 boys and 88 girls; and the deaths to 160—78 males and 82 females.

The deaths represent an annual rate of mortality of 23·6 in every 1,000 of the estimated population. Omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 22·6 per 1,000.

The number of deaths from zymotic diseases registered during the week is 27, being equal to the average for the corresponding week of the last ten years, but 16 under the number for the week ended October 6. They comprise 2 from scarlet fever (scarlatina), 7 from whooping-cough, 3 from enteric fever, 13 (including 11 deaths of children under 5 years of age) from diarrhœa, &c.

Seventeen cases of enteric fever were admitted to hospital during the week, against 6 for the preceding week, and 11 for the week ended September 29. Eight enteric fever patients were discharged during the week, and 59 remained under treatment on Saturday, being 9 over the number in hospital at the close of the preceding week.

Four cases of scarlatina and 3 of typhus were admitted, against 5 cases of the former and one of the latter disease admitted during the preceding week; 18 cases of scarlatina and 7 of typhus remained under treatment in hospital on Saturday last.

Twenty-three deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, but 7 under the average for the 41st week of the last ten years. They comprise 17 from bronchitis, and 4 from pneumonia or inflammation of the lungs.

In the week ending Saturday, October 20, the mortality in twenty-eight large English towns, including London (in which the rate was 20·0), was equal to an average annual death-rate of 21·0 per 1,000 persons living. In Glasgow the rate was 21·3; and in Edinburgh it was 15·9.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in Londonderry, Waterford, Drogheda, Sligo, and Lurgan, to 8·6 in Wexford. The 5 deaths from all causes registered in the last-named district comprise 1 from scarlatina and 1 from diarrhœa. Among the 97 deaths from all causes registered in Belfast are 2 from scarlatina, 2 from typhus, 4 from enteric fever, and 3 from diarrhœa. The 36 deaths

in Cork comprise 1 from scarlatina, 2 from whooping-cough, and 2 from diarrhoea; and the 24 deaths in Limerick comprise 4 from scarlatina and 1 from diarrhoea.

In the Dublin Registration District the births registered during the week amounted to 183—92 boys and 91 girls; and the deaths to 164—75 males and 89 females.

The deaths represent an annual rate of mortality of 24·2 in every 1,000 of the estimated population. Omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 23·5 per 1,000.

The number of deaths from zymotic diseases registered is 26, being 2 below the average for the 42nd week of the last ten years, and 1 under the number for the week ended October 13. The 26 deaths comprise 1 from measles, 1 from scarlet fever (scarlatina), 1 from typhus, 6 from whooping-cough, 1 from diphtheria, 6 from enteric fever, 5 from diarrhoea, 2 from dysentery, &c.

Nineteen cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week. Twelve enteric fever patients were discharged, 3 died, and 63 remained under treatment on Saturday, being 4 over the number in hospital on Saturday, October 13.

Seven cases of scarlatina and 2 of typhus were admitted to hospital, against 4 cases of the former and 3 of the latter disease admitted during the preceding week. Twenty cases of scarlatina and 7 of typhus remained under treatment in hospital on Saturday.

Twenty-five deaths from diseases of the respiratory system were registered, being 2 over the number for the preceding week, but 6 below the average for the 42nd week of the last ten years. They comprise 15 from bronchitis, 7 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, October 27, the mortality in twenty-eight large English towns, including London (in which the rate was 21·2), was equal to an average annual death-rate of 21·8 per 1,000 persons living. In Glasgow the rate was 20·9; and in Edinburgh it was 16·0.

The average annual death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 20·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in eight of the districts to 10·3 in Armagh—the 4 deaths from all causes registered in that district comprising 2 from measles. Among the 93 deaths from all causes registered in Belfast are 2 from simple continued fever, 4 from enteric fever, and 5 from diarrhoea. The 26

deaths in Cork comprise 1 each from scarlatina, whooping-cough, diphtheria, simple continued fever, and diarrhoea; and the 17 deaths in Limerick comprise 3 from scarlatina and 1 from typhus.

In the Dublin Registration District the births registered during the week amounted to 177—104 boys and 73 girls; and the deaths to 148—57 males and 91 females.

The deaths represent an annual rate of mortality of 21·9 in every 1,000 of the estimated population. Omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 21·1 per 1,000.

Thirty deaths from zymotic diseases were registered, being 1 in excess of the average for the corresponding week of the last ten years, and 4 over the number for the week ended October 20. They comprise 3 from measles, 1 from scarlet fever (scarlatina), 5 from whooping-cough, 4 from enteric fever, 11 from diarrhoea, 1 from dysentery, &c.

The number of cases of enteric fever admitted to hospital during the week was 10, being a decline of 9 as compared with the admissions for the preceding week. Twelve enteric fever patients were discharged, 2 died, and 59 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, October 20.

Eight cases of scarlatina and 1 case of typhus were admitted to hospital, against 7 cases of the former and 2 of the latter disease admitted during the preceding week: 25 cases of scarlatina and 5 of typhus remained under treatment in hospital on Saturday.

Twenty-six deaths from diseases of the respiratory system were registered, being 1 over the number for the preceding week, but 9 under the average for the 43rd week of the last ten years. They comprise 20 from bronchitis and 2 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 3, the mortality in twenty-eight large English towns, including London (in which the rate was 19·7), was equal to an average annual death-rate of 19·6 per 1,000 persons living. In Glasgow the rate was 19·8; and in Edinburgh it was 15·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 21·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in Londonderry, Newry, Drogheda, Wexford, Dundalk, Sligo, and Lurgan, to 36·1 in Armagh. The 9 deaths from all causes registered in the last-named district comprise 4 from measles and 3 from whooping-cough. Among the 100 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from typhus, 1 from whooping cough, 2 from diphtheria, 1 from simple continued fever, 2 from enteric fever, and 8 from diarrhoea;

and the 10 deaths in Limerick comprise 1 each from scarlatina, simple continued fever, and diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 145—61 boys and 84 girls; and the deaths to 165—87 males and 78 females.

The deaths represent an annual rate of mortality of 24·4 in every 1,000 of the estimated population. Omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 23·9 per 1,000.

The number of deaths from zymotic diseases registered is 25, being 4 below the average for the corresponding week of the last ten years, and 5 under the number for the week ended October 27. The 25 deaths comprise 2 from measles, 1 from scarlet fever (scarlatina), 2 from typhus, 6 from whooping-cough, 1 from diphtheria, 8 from enteric fever 1 from diarrhœa, &c.

Ten cases of enteric fever were admitted to hospital, being equal to the admissions for the preceding week, but 9 under the number for the week ended October 20. Twelve enteric fever patients were discharged, 3 died, and 54 remained under treatment on Saturday, being 5 under the number in hospital at the close of the preceding week.

Only 4 cases of scarlatina were admitted, against 8 in the preceding week. Four scarlatina patients were discharged during the week, and 25 remained under treatment on Saturday, being equal to the number in hospital on that day week.

Two cases of typhus were admitted and 2 patients were discharged, leaving the number (5) in hospital on Saturday the same as that for Saturday, October 27.

Thirty-four deaths from diseases of the respiratory system were registered, being 8 over the number for the preceding week, but 2 under the average for the 44th week of the last ten years. They comprise 24 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 3 from croup.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of October, 1888.*

Mean Height of Barometer,	-	-	30·030 inches.
Maximal Height of Barometer (on 21st at 9 p.m.),	-	-	30·417 "
Minimal Height of Barometer (on 2nd, at 9 p.m.),	-	-	29·230 "
Mean Dry-bulb Temperature,	-	-	48·2°.
Mean Wet-bulb Temperature,	-	-	46·4°.
Mean Dew-point Temperature,	-	-	44·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	·298 inch.

Mean Humidity, - - - -	-	87·4 per cent.
Highest Temperature in Shade (on 27th), -	-	66·6°.
Lowest Temperature in Shade (on 2nd), -	-	32·9°.
Lowest Temperature on Grass (Radiation) (on 6th),		27·9°.
Mean Amount of Cloud, - - - -	-	57·0 per cent.
Rainfall (on 16 days), - - - -	-	1·227 inches.
Greatest Daily Rainfall (on 27th), -	-	·331 inch.
General Directions of Wind, - - -	-	S.W., W., N.W.

Remarks.

A generally favourable month, with much quiet fine weather except at the beginning and end. The first week was very cold and showery, and fresh northerly winds prevailed. An anticyclonic period followed, in which the weather was chiefly fine, but foggy or cloudy. Except for a few hours on the 12th, the barometer did not fall below 30 inches from the 6th to the 24th inclusive. The last seven days were remarkably warm, with strong S.W. winds or gales and frequent showers. Temperature was giving way decidedly at the very close of the month.

In Dublin the mean temperature (49·1°) was—as in September—below the average (49·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 48·2°. In the twenty-three years ending with 1887, October was coldest in 1880 (M. T. = 45·4°), and in 1885 (M. T. = 45·5°), and warmest in 1876 (M. T. = 53·1°). In 1886, the M. T. was as high as 52·0°; in the year 1879 (the “cold year”), it was 49·7°; and in 1887 it was as low as 47·3°.

The mean height of the barometer was 30·030 inches, or 0·183 inch above the average value for October—namely, 29·847 inches. The mercury rose to 30·417 inches at 9 p.m. of the 21st, and fell to 29·230 inches at 9 p.m. of the 2nd. The observed range of atmospherical pressure was, therefore, 1·187 inches—that is, a little less than an inch and two-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 48·2°, or 5·5° below the value for September, and 9·4° below that for August, 1888; that calculated by Kaemtz's formula—viz., $\text{min.} + (\text{max.} - \text{min.} \times \cdot 41) = \text{Mean Temp.}$ —from the means of the daily maxima and minima was 48·1°, or 1·1° below the average mean temperature for October, calculated in the same way, in the twenty years, 1865–84, inclusive (49·2°). The arithmetical mean of the maximal and minimal readings was 49·1°, compared with a twenty-three years' average of 49·8°. On the 27th the thermometer in the screen rose to 66·6°—wind S.S.W.; on the 2nd the temperature fell to 32·9°—wind N.W. The minimum on the grass was 27·9° on the 6th. The rainfall was 1·227 inches, distributed over 16 days—both rainfall and rainy days were perceptibly more than the values for the preceding month of September—viz., ·728 of an inch on

10 days. The average rainfall for October in the twenty-three years, 1865-87, inclusive, was 3·111 inches, and the average number of rainy days was 17·4. The rainfall, therefore, was again much below the average, and the rainy days were slightly below it. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1884, only ·834 inch was measured on but 14 days, and in 1868 only ·856 inch on 15 days.

Lunar halos appeared on the 15th and 20th. High winds were noted on 8 days, and attained the force of a gale on three occasions, the 26th, 28th, and 30th. The atmosphere was more or less foggy in Dublin on the 9th, 11th, 15th, 16th, 17th, 22nd, and 23rd. Lightning was seen on the night of the 2nd, when thunder-showers passed along the Welsh coast over the sea from N.N.W. to S.S.E. Hail fell with heavy showers of rain on the 3rd and 6th.

Not for many years has October been ushered in with such cold and inclement weather as that which prevailed during the first week. A succession of polar depressions, or cyclonic systems, with their subsidiaries, travelled southwards, or southwestwards, across Western Europe. Strong northerly (N.W. to N.E.) winds were consequently prevalent over the British Islands, accompanied by squalls of cold rain, hail, and sleet or snow. On Monday, the 1st, icy rain fell and the Dublin and Wicklow mountains became snowcapped; a sharp frost followed at night, when the thermometer in the screen fell to 27° at Parsonstown. Lightning occurred over the Irish Sea on Tuesday evening. Hail fell next morning and also on Saturday. In Dublin the mean height of the barometer was 29·735 inches, or ·331 inch below the mean for the previous week (30·066 inches), and no less than ·568 inch below that for the week ending September 22nd. The barometer rose to 30·228 inches at 9 p.m. of Saturday (wind, N.), having fallen to 29·230 inches at 9 p.m. on Tuesday (wind, N.W.). The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 41·7°, or nearly 12° below the corresponding value for the preceding week (53·6°) and fully 10° below the average for the time of year. The arithmetical mean of the highest and lowest daily temperatures was 42·6°. Temperature rose to 52·8° on Thursday (wind, W.) and fell to 32·9° on Tuesday (wind, N.W.). Rain fell on five days—the total measurement being ·384 inch, of which ·170 of an inch was measured on Monday. Hail fell on Wednesday and Saturday, and lightning was seen on Tuesday evening.

In the period from the 7th to the 13th inclusive, the weather was generally favourable and much milder than during the previous week. The barometer was throughout highest off the west and southwest of Ireland, so that the prevailing winds were N.W. and W. Some extensive, although not unusually deep depressions, passed eastwards across

Scotland, the Norwegian Sea, and Scandinavia during the week; consequently, the amount of cloud was large and the wind freshened considerably at times, with a decided rise of temperature in Ireland. Sharp night frosts occurred in the midland and eastern counties of England until Tuesday. Very little rain fell in the United Kingdom, but in Southern Germany there were heavy rains and snows in the earlier part of the week. In Dublin the mean height of the barometer was 30·157 inches, or ·422 of an inch above the mean for the preceding week (29·735 inches). The mercury rose to 30·273 inches at 8 a.m. of Monday (wind, N.W.), and fell to 29·954 inches at 9 p.m. of Friday (wind, W.). The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 48·7°, or 7° above the value for the previous week (41·7°). The arithmetical mean of the highest and lowest daily temperatures was 49·5°. Temperature in the screen rose to 56·5° on Friday (wind, W.), having fallen to 40·1° on Sunday (wind, N.W.). Rain fell on two days—the total measurement being only ·083 of an inch, of which amount ·073 of an inch fell on Sunday. The air was lightly foggy on the mornings of Tuesday and Thursday. A rapid fall of temperature occurred on Friday night.

During the week ended Saturday, the 20th, the weather was generally favourable—brilliant at the beginning and close; dull, foggy, and showery in the intervening period, when atmospherical depressions were travelling northwards outside the western shores of Ireland and Scotland. In England the diurnal range of temperature was considerable, calm, foggy, frosty nights being succeeded by bright, warm days. In Scotland and Ireland the greater prevalence of clouds checked radiation and so the extremes of temperature were less pronounced. In Dublin the mean height of the barometer was as much as 30·262 inches, the readings varying from 30·373 inches at 9 a.m. of Monday (wind, W.N.W.) to 30·101 inches at 9 p.m. of Thursday (wind, S.S.E.). The mean temperature, deduced from readings of the dry bulb thermometer taken daily at 9 a.m. and 9 p.m., was 47·1°; that deduced from the highest and lowest daily temperatures was 48·7°. The thermometers in the screen rose to 58·4° on Thursday (wind, S.S.E.), and fell to 35·1° on Sunday (wind, W.N.W.). Rain fell on three days, but only ·072 of an inch was registered. Of this amount, ·052 of an inch was measured on Tuesday.

In the fourth week (21st to 27th inclusive), conditions were at first anticyclonic, and the weather was fine and quiet, with mild, bright days, and cold foggy nights. At 7 45 p.m. of Tuesday, the thermometer read 42·2°, and a dense fog prevailed in Dublin; an hour later, temperature was 7° higher, a S.W. wind was blowing, and there was clear moonlight. Atmospherical pressure now gave way in the W. and N., and a mild south-westerly current set in, causing a decided and remark-

able rise of the thermometer. The last three days of the week were summerlike as regards temperature, but strong S.W. winds and showers took the place of the previous calms and fogs. The mean temperature of Saturday was 63.9° , or about 16° above the average for the time of year. On this day the screen thermometer rose to 66.6° , but did not fall below 61.2° . The mean of the 9 a.m. and 9 p.m. readings was 62.9° . In Dublin the mean height of the barometer was 30.040 inches. The mercury rose to 30.417 inches at 9 p.m. of Sunday (wind calm), and fell to 29.664 inches at 9 p.m. of Thursday (wind, S.S.W.). The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 58.0° , or 11.3° above that for the week ending October 6. The arithmetical mean of the highest and lowest daily temperatures was 52.9° . Temperature in the screen rose to 66.6° on Saturday (wind, S.S.W.), having fallen to 33.1° on Tuesday (wind, W.). Rain fell on three days to the amount of .420 of an inch. Of this quantity .331 of an inch was measured on Saturday.

The last four days of the month were changeable, south-westerly gales prevailing on Sunday, the 28th, and Tuesday, the 30th. Temperature showed a gradual but decided tendency to fall, while the wind drew towards W.

The rainfall in Dublin during the ten months ending October 31st has amounted to 19.219 inches on 147 days, compared with 12.366 inches on 123 days during the same period in 1887, and a twenty-three years' average of 22.914 inches on 160.5 days.

At Greystones, Co. Wicklow, the rainfall in October, 1888, was 2.23 inches, distributed over 13 days. Of this quantity .63 of an inch fell on the 27th, and .36 of an inch on the 1st. Since January 1, 23.86 inches of rain have fallen at Greystones, on, however, only 104 days.

NIGHT SWEATS.

Few practitioners appreciate the exceedingly great value of agaricin as a remedy in night sweats, especially those of phthisis. The most profuse sweat is checked almost by magic, with a single dose. It operates by diminishing thirst and increasing the secretion of urine. The dose may be pushed to the extent of one grain in the course of twenty-four hours. The single dose for an adult is from one-eighth to one-fourth of a grain.—*Technics*, No. 8. Boston.

NEURALGIA.

DR. GALEZOWSKI (*L'Union Médicale*, 16th Feb.) recommends the following ointment to relieve the pain of neuralgia:—*R.* Menthol, 0 gr. 75 centgr.; cocaïn., 0 gr. 25 centgr.; chloral hyd., 0 gr. 15 centgr.; vaselini, 5 grammes. *M. ft. ungt.*

PERISCOPE.

CONDURANGO IN CANCER OF THE STOMACH.

DR. REISS (*Berlin. klin. Woch.*) reports that from 10 gramme doses of condurango daily in cancer of the stomach much relief to the patient results; pain is sensibly diminished, the appetite is improved, there is a gain in weight, and life is prolonged.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 23.

ANTIPIRYN IN ASTHMA.

DR. J. L. DODGE, Louisville, Ky. (*New York Medical Journal*, 18th Feb., 1888), reports a case of severe asthma of three years' standing, which had resisted lobelia, grindelia robusta, iodide of potassium, and pyridin, cured by antipyrin. Fifteen-grain doses were given the first night at 6 p.m. and at 12 midnight, with the result that a comparatively good result was obtained. The dose was gradually reduced to five grains three times a day, and in one week the paroxysms ceased entirely.

RECURRENT EPISTAXIS.

DR. VERNEUIL, Académie de Médecine, reports three cases of persistent epistaxis, cured by the application of a large blister over the region of the liver. He draws attention to the fact that this treatment is as old as Galen, and accounts for the good results by ascribing a revulsant action to the blister.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 17.

ANTIPIRYN IN LABOUR.

E. H. GRANDIN, M.D. (*New York Medical Journal*, July 14, 1888), advises use of antipyrin during labour. He gives 15 grains well diluted, repeating the dose in an hour, and then giving 10 grains every two hours as long as required. At the same time he gives 15 grains of chloral every three-quarters of an hour until three or four doses have been taken. The pains are practically unfelt, the progress of the labour is not impeded, and neither the mother nor the child is the worse.

NITRO-GLYCERINE.

PROFESSOR MUNASSEINE (*Vratch*) has been trying the effects of nitro-glycerine in nephritic cases, and, from a number of observations, concludes that nitro-glycerine diminishes the amount of albumen passed in the twenty-four hours; the amount of urine passed is increased in the twenty-four hours, and this increase is maintained for some time after the cessation of the drug.—*L'Union Médical*, No. 135.

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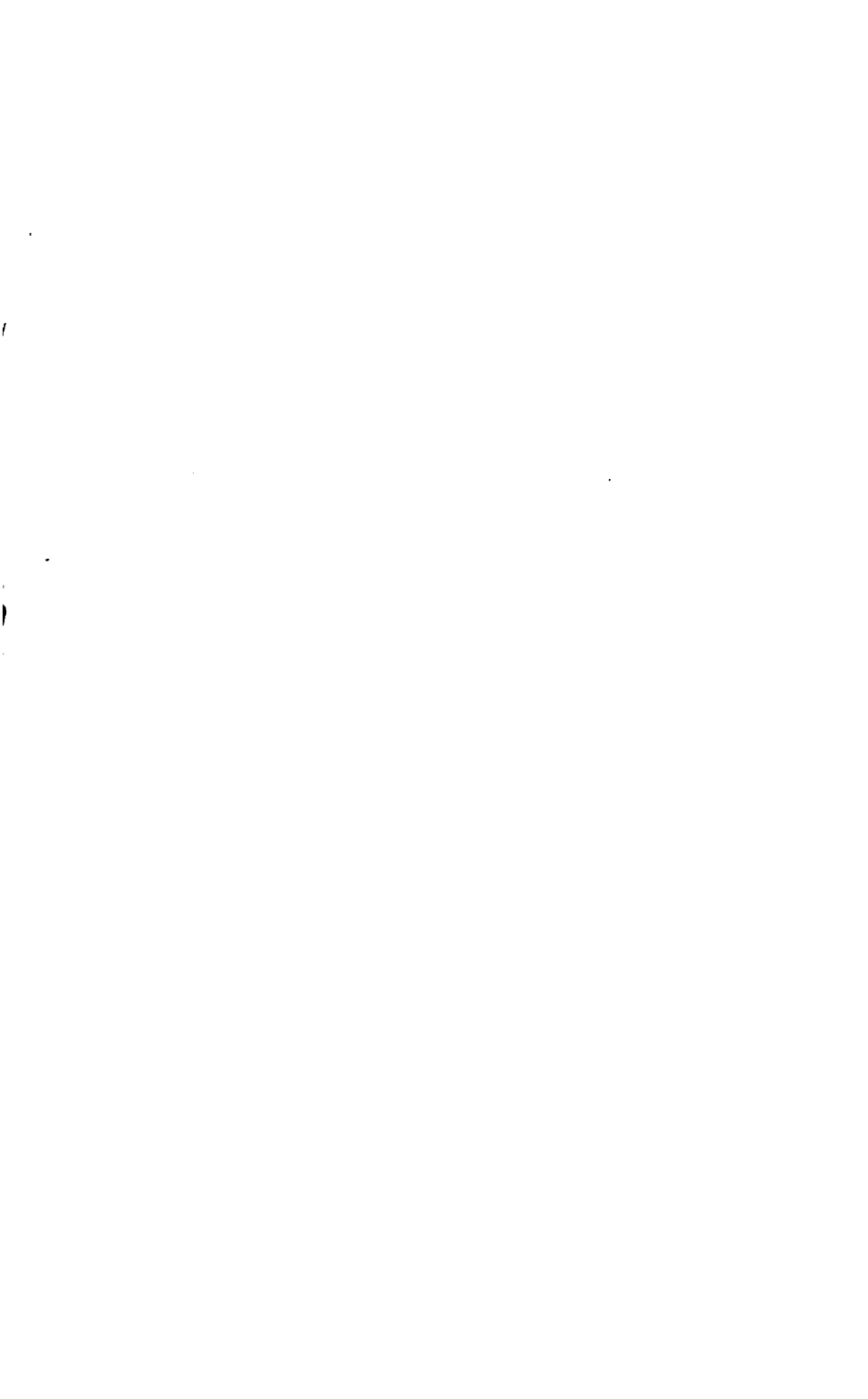
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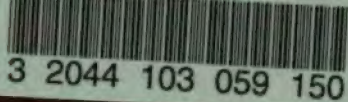
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